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Textile World

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Editor: Douglas G. Woolf

"Labor Extension" Misinterpreted

FROM the leading editorial in the July 10 issue of the *Southern Textile Bulletin,* we learn that Textile World has "come out flat-footed for unionization of cotton mills."

And here is the method by which the *Bulletin* reaches this conclusion:

First, it quotes the following paragraph from editorial in the June 21 issue of Textile World:

"No matter how much individual groups may resist the theory of *labor-extension,* its application in the textile industry is only in its infancy. It must be counted as one of the major movements which promise to establish textile manufacture on a fundamentally sound basis, from the standpoint of both employers and employees."

Then, the *Bulletin* interprets this paragraph as follows:

"In the first paragraph of their editorial as quoted above they assert that the *extension of union labor* within the textile industry will aid in establishing the industry upon a sound basis.

"The textile industry of England is upon an absolutely closed shop basis and has been dominated by unions for many years, yet it is today in a worse condition than the textile industry in this country.

"According to the theory of the Textile World the textile industry of England should be upon a very sound basis."

[The italics in both cases are ours]

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When we used the term "labor-extension," which is so well understood by the industry at large, we did not imagine that anyone would interpret it to mean "the extension of union labor." It has, as our readers know, nothing to do with the question of unions. It is a term applied to the so-called "stretch-out" systems for re-arranging mill operations, so that an employee may tend more machines, with resulting savings to the mill and increased pay to the individual operative. The principle of "labor-extension" has been recognized as a vital factor in the progressive development of all industries.

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We suggest that the editor of the *Southern Textile Bulletin,* with this information now at his command, re-read the editorial in our June 21 issue, which we are reprinting below. We know he will realize that we were not advocating the closed shop; that we were discussing the principle of "labor-extension" as defined above; that we cited Naumkeag as one plant where the union had cooperated in this job; that we stated specifically that there would be few such examples of successful group activity, if unions did not change their attitude; and that we drew certain conclusions, from the Naumkeag case, for the benefit of both manufacturers and employees in their approach to the labor-extension or stretch-out problem.

Employer-Union Cooperation

(Reprinted from June 21, 1930, issue of Textile World)

NO MATTER how much individual groups may resist the theory of labor-extension, its application in the textile industry is only in its infancy. It must be counted as one of the major movements, which promise to establish textile

manufacture on a fundamentally sound basis, from the viewpoint of both employers and employees.

Consequently, it behooves manufacturers and unions to study carefully each instance of successful adoption of the plan.

An outstanding case has been that of the Pequot Mills of the Naumkeag Steam Cotton Co. at Salem, Mass.

We have been following developments at that plant with profound interest. We realize that Naumkeag started with certain definite advantages.

First of all, the company had a background of healthy industrial relations, of mutual confidence between management and workers. When differences finally arose, emotionalism was not allowed to run rampant. Despite the fact that Agent J. Foster Smith had been connected with the mills for 52 years, during most of which time the union was not recognized, he did not let traditional prejudices stand in the way of solution of those differences.

Second, the company has maintained its equipment at a high level of efficiency, and has constantly improved its working conditions.

Third, it was fortunate in having in John P. O'Connell, secretary of the Salem local of the United Textile Workers Union, the type of man with whom it could cooperate.

Consequently, it was natural that its experiment in the field of research work, participated in jointly by management and union, should have progressed successfully to the stage where a definite agreement was reached, promising higher wages and broader profits. The lesson, for both manufacturers and unions, is an obvious one.

To the latter, we recommend a study of the attitude of Mr. O'Connell. When we talked with him about the Naumkeag plan, he continually referred to "our" plant, "our" equipment, "our" product. He spoke as if he were one of the stockholders of the company, and not as an antagonist. Throughout the cooperative research effort, he and his local have been striving to help Naumkeag make a better product—and to find broader outlets for that product. Until other union representatives adopt that attitude, there will be few such examples of successful group activity. Quite frankly, we feel that the United Textile Workers Union has been making the Naumkeag proposition a "show case"—a sort of "window dressing." Instead, it must regard it as a yard-stick for future attempts to cooperate with employers.

To manufacturers, we recommend a study of Mr. Smith's attitude. He recognized the fact that labor extension was a twofold problem—an engineering and a psychological one. He knew that no worthwhile results could be achieved unless machinery and plant management were at the maximum level of efficiency; and unless every individual, down to the sweeper, understood that the end-point was not solely larger profits for the company nor solely higher wages for the workers, but a fair combination of both.

Without such an approach to the problem, on both sides, employer-union cooperation is merely an idle dream.

Letters to the Editor

Educating An Industry

MARIETTA, GA.

Editor, TEXTILE WORLD:

I wish to express appreciation of your editorial in the current issue, July 5, page 39, regarding the opportunity for service on the part of an institute or association in educating its members, and others, in wholesome trade practices.

We, too, hope that this educational process can be carried on till all concerns of importance will put their transactions on a business basis for the good of the craft as a whole.

Your timely words should carry weight and do some good.

JAS. J. DANIELL, *Vice-president*,
Marietta Knitting Co.

Brazilian Knitter Translates Our Technical Articles

SAO PAULO, BRAZIL.

Editor, TEXTILE WORLD:

We are interested in all articles treating the knitting trade and as this industry is yet in its infancy in this country, we have to learn a great deal and we find TEXTILE WORLD very instructive in our line. We look for it every week to read and learn something interesting and useful as well.

The technical part we translate to our men who are on the machinery. Your opinion on the cotton and silk position and tendency is warning to us as importers and distributors of yarn.

NICHOLAS NASSER.

Why Part of Textile Alliance Surplus Went to Three Named Schools

BOUND BROOK, N. J.

Editor, TEXTILE WORLD:

I have read in the daily papers as well as in your publication about endowments given by the Textile Alliance to three educational institutions.

The selection of the particular three institutions puzzled me. The figures were somewhat as follows: Princeton University, $124,000; Philadelphia Textile School, $248,000; Massachusetts Institute of Technology, $28,000.

I believe, that this subject is worthy of your editorial comment, not to say propaganda. The ratios of the endowment and the selection of the schools does not seem to be in any relation to the merit of existing schools with respect to the textile industry.

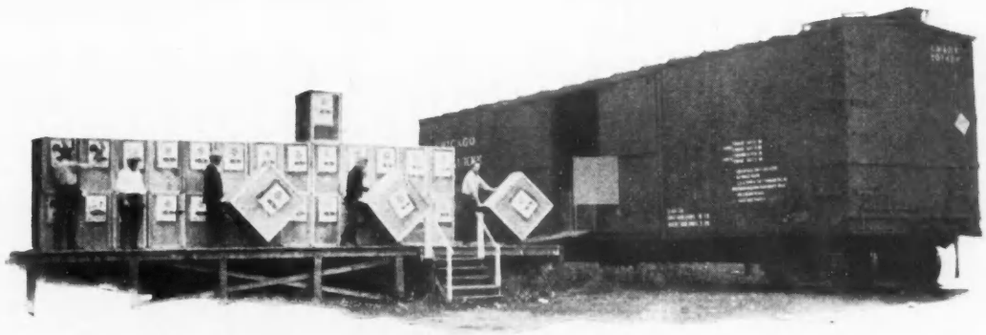
I have in mind particularly the Lowell Textile Institute. Why should an institution like that be overlooked? Of course there are also the New Bedford Textile School, and several down South, all of which confine themselves to teaching textiles, and therefore should be first in line to receive endowments. H. H. H.

Our reply follows:

Your inquiry regarding the distribution of part of the fund left in the hands of the Textile Alliance is one that may have occurred to others and perhaps should have been answered at the time the distribution was made by a more complete story upon the subject. The fact is that the assignment of funds to Philadelphia Textile School, Princeton and Massachusetts Institute of Technology was established several years ago and as we understand it neither the recent court decision nor the Merritt Bill had anything to do with the matter.

At the time when the Textile Alliance was set to work handling reparations dyestuffs alloted to this country from Germany's stock after the war, its activities had to be financed and a

(Continued on page 82)



Textile Export Association Formed Under Webb-Pomerene Act

THE formation of an association, under the provisions of the Webb-Pomerene Act, to be known as the Textile Export Association of the United States, was consummated by representatives of a number of firms interested in the export of cotton textiles at a meeting held July 15, in the rooms of The Association of Cotton Textile Merchants of New York.

This was the second meeting of representatives of cotton textiles exporters interested in organizing for the purpose of pursuing such group activities as are permissible under the provisions of the act. It was stated by Floyd W. Jefferson of Iselin-Jefferson Co., who presided, that the activities of the new association will probably be confined, for the present, to bringing about uniformity in terms of payment on exported textiles. This in itself is an intricate problem when it is considered that uniform terms for approximately 45 foreign countries will be involved.

At the first meeting held on July 1, after the project had been the subject of consideration for several months by special committees representing The Cotton-Textile Institute and The Association of Cotton Textile Merchants of New York, a definite recommendation was made that such an export association be formed. A proposed constitution was presented at the meeting for consideration of those who had signified their willingness to become members.

At this week's meeting, it was moved and unanimously carried that the constitution be adopted after a discussion which resulted in several minor changes.

A nominating committee, to be appointed by the chairman, will name six men for the proposed board of directors. These names will be submitted for approval of the members at the first meeting of the new association scheduled for Aug. 5.

It is felt by interested parties that the formation of this body will instill a sense of unity in the export trade and will make it possible for the association to act on recommendations that may be made by its commitees. In the past there have been different group meetings of exporters, but little in the way of a uniform program had been accomplished.

It was stated that the following firms have signed thus far:

Amory, Browne & Co., Bliss, Fabyan & Co., Inc., M. C. D. Borden & Sons, Inc., Brune Pottberg & Co., Iselin-Jefferson Co., Neuss, Hesslein & Co., Prince, Lauten & Co., J. P. Stevens & Co., Inc., Turner, Halsey Co., Wellington, Sears & Co., Woodward, Baldwin & Co.

The new association will shortly include in its membership many other firms among commission houses, converters and independent exporters, inasmuch as a number of representatives who attended the meeting stated that while their principals are heartily in accord with the plan to form an export association, authority to sign as members immediately had not been delegated to them. It is believed that membership in the near future would be approximately 30. Just as soon as such formalities as the appointment of a board of directors, have been taken care of, a committee will be appointed for the purpose of working out uniform terms of payment on foreign shipments.

The Week in Textiles

Outlook . . .

COTTON GOODS market shows firmer tone even though the raw material remains a bit irregular. Sellers of both cloths and yarns are optimistic that improvement lies ahead even though progress may be a bit slow. . . . . Wool goods sellers find their trade slow but feel that uncovered fall business must soon bring clothiers into market. Tropicals held back for better market. . . . . Little change in knit goods is apparent. Summer trade in bathing suits and knitted specialties is drawing to a close and buying for fall is cautious. . . . . Upturn in raw silk has aided markets for yarns and fabrics. Basis is still abnormally low and should stimulate broader distribution.

Research Directors to Meet . . .

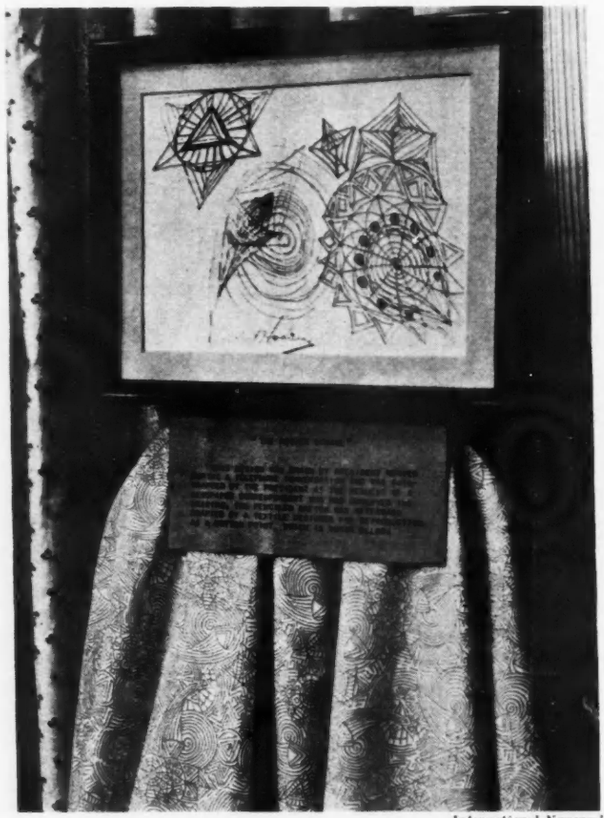
PRELIMINARY BOARD of directors of the United States Institute for Textile Research appointed at the meeting in New York on May 23, will meet for tentative adoption of by-laws and for temporary organization at the Chemists Club, New York, at 1:30 p.m. on July 29. . . . . The call for the meeting was sent out by P. J. Wood, acting-chairman of the institute and C. H. Clark, acting-secretary. Copy of the revised by-laws prepared by the committee under chairmanship of Dr. E. H. Killheffer will be sent to each director. . . . . The meeting will prepare a presentation to the directors of the recently established Textile Foundation of specific research needs which should merit the latter's financial support.

Most Dramatic of Fibers . . .

"THE PRODUCTION of raw cotton, the manufacture and distribution of its myriad products, provide the basis upon which many American industries are established," said George A. Sloan, president of The Cotton-Textile Institute, in acknowledging the Westinghouse salute to the cotton textile industry in that company's radio broadcast last Tuesday evening. "Cotton," said Mr. Sloan, "is the most dramatic of all fibers. Saturate cotton with nitric and sulphuric acids and it becomes one of the most violent of explosives. Spin cotton into fine threads and it can be woven into cloth of spider-web sheerness." . . . . Incidentally, Mr. Sloan found himself presented with—and decidedly embarrassed by—a new title when the announcer introduced him as "Dr. Sloan." However, there was no way out of the embarrassment as the announcer was in Pittsburgh while Mr. Sloan was speaking from New York, and it was hardly feasible to take 30 seconds out of his precious four minutes, to return the title with thanks.

On Weighted Silks . . .

TO SOLVE the perplexing problem of silk weighting, the Textile Division of the Bureau of Standards is continuing its investigation but is not likely to make any report or recommendations until fall. . . . . Preliminary results show that the amount of weighting is not the only factor. A small amount improperly applied, tests show, will cause more trouble than a large amount properly applied. In some cases the fabric may not be constructed properly to take the weighting. The laboratory problem boils down to determination of whether the fabric is satisfactory as it stands, and to arrangement of an accelerated ageing test.



International Newsreel

Closeup of the framed and autographed pencil scrawling, drawn by President Hoover while holding a telephone conversation at his office. Below is a sample of the new cotton cloth in which the President's scrawl has been reproduced as a design. The display is at the Smithsonian Institution

Cotton Consumption . . .

COTTON CONSUMPTION for June totaled 405,181 bales against 569,414 bales a year ago, according to the Dept. of Commerce. . . . . For the 11 months ending June figures are 5,735,097 and 6,543,900 bales for 1930 and 1929 respectively. Cotton on hand (mills and storage) June 30 was 4,462,383 bales against 2,664,444 a year ago. . . . . June exports amounted to 185,053 bales against 299,136 a year ago and the 11 months period shows 6,514,375 against 7,806,081.

Trade Practice Codes . . .

FEDERAL TRADE COMMISSION has concurred in the request of industrial groups that the revision of trade practice codes should be suspended until after they have had an opportunity to discuss the practical problems involved at a meeting scheduled for the last

week in September at Niagara Falls, Ont. . . . . Abram F. Myers, chairman of the standing committee of the industries which have held trade practice conferences, has been advised by the commission that all industries whose trade practice conference rules will be changed or modified by the commission will have 30 days from Sept. 25 in which to file written objections.

Wool Stock Men Seek Code . . .

A PREVIOUSLY AUTHORIZED trade practice conference of wool-stock graders doing an annual business estimated at $50,000,000 will be held Friday, July 25, in New York at the Martinique Hotel. Commissioner C. W. Hunt will preside. . . . . Efforts will be made at the conference to draw up rules providing for elimination of unfair trade practices. Among subjects already listed for discussion are misrepresentation, commercial bribery, inducing breach of contract, defamation of competitors, and selling below cost to injure a competitor. . . . . Applicants for the conference represent approximately eighty per cent of the industry's annual volume of business.

"Men and Machines" Exhibit . . .

STORY OF THE rise of the "Machine Age" will be told in a special educational exhibit based on the theme of "Men and Machines," to be held from Sept. 12 to Nov. 15 by the Museums of the Peaceful Arts, New York City's museum of science and industry, according to announcement by Frederic B. Pratt, president of the Museums and also of the Pratt Institute, Brooklyn. The exhibit will present a dramatic epitome of the scientific discoveries, inventions and machine improvements, which, in a period of 15 decades, have effected a world revolution in industry and society. . . . . C. H. Clark, secretary-treasurer of Textile Research Council, Boston, has been invited to take charge of collecting and organizing the textile machinery exhibit. A room has been set aside for textiles and among the firms cooperating are American Bemberg Corp., Barber-Colman Co., Crompton & Knowles Loom Works, DuPont Rayon Co., Foster Machine Co., John Royle & Sons and Textile Machine Works.

Bonney

Novelties from Paris—At right, black fabric bathing suit with heavy worsted embroidery in red and blue offered by Sonia Delauny. At left, all-over eyelet embroidery on a cotton organdie is new note from Martial & Armand. Color is rose.

The Business Outlook

"The passing of the mid-year spurt, marked by unusually high levels of building, contracting, and money turnover, has left business facing the full force of the usual July slackness, now emphasized by a depression year . . . General trade, though slackening somewhat with the season, continues well sustained in comparison with production . . . The excessive pessimism of recent months will have progressively less to feed upon as we pass the end of July. The most doubtful features of the situation are the disposition of the Farm Board to let further commodity price deflation proceed under the weight of temporary wheat and cotton surpluses, and the recent signs that the Reserve authorities are relaxing their efforts to sustain the rate of credit expansion."

—The Business Week

Curtailment in Finishing . . .

ACTIVITY IN THE finishing of cotton goods fell off in June from May, according to the monthly figures of the National Association of Finishers of Cotton Fabrics. . . . . For the four weeks of June dyeing and bleaching ran 42% capacity equally divided between the two. For the five weeks of May the rate was 49% (47% white, 53% dyed). In June, 1929, the rate was 61%. . . . . Similar figures in the same order for other processes follow: fast black, 14%, 18% and 23%; logwood black, 33%, 34% and 44%; prints, 54%, 63% and 87%. . . . . Except in the blacks, the decline in activity from May to June this year was not so marked as the decline between the same months a year ago.

Indian Cotton Stock Smaller . . .

ALTHOUGH STOCK of American cotton in this country is much larger than at this time last year and two years ago, stock of Indian cotton in India is considerably smaller than last year and somewhat smaller than two years ago, according to the current report of the New York Cotton Exchange Service. . . . . The running down of supplies in India to a level below those in the last two years has been partly responsible for the narrowing of the price differences between competing varieties of Indian and American cotton.

Repair Records Throw Light on Maintenance Costs

By P. S. Huntley

IN MANY mills where there is a large amount of machinery repair work only too often no records are kept of the time spent or the amount of material used on each job. Old machinery that should be junked is often repaired at a cost far in excess of a justified amount. With a proper record of jobs accomplished, a high-cost repair job would be impossible, as previous costs would tell the story before the job was started. Quite often an estimate of time and material required to do the work will indicate whether the repair is justified.

There are many systems for keeping repair records, but the best is the simplest one that can be devised to fit the conditions in the particular mill under consideration. Do not let any so-called expert install a system without careful study of every detail that is connected with the business. The best methods in use today are those that require only a few simple forms and a minimum of clerical work.

Use of Repair Records

In devising a cost and time-keeping method for a textile plant the first thing to be considered is. What do we wish to know about the jobs, and what figures do we wish to obtain? Naturally we wish to know what each job cost, who did the work, when it was done, on what machine the repair was made, and in what department is the machine located. We should like to know also how many times that particular machine has been repaired in the same manner, so that we may investigate the cause and overcome the need for repairs. We likewise are interested in knowing whether the man that did the work took longer on the job than some other man did on a previous occasion. All these questions can be readily answered with a simple method of time keeping and a few entries in a suitable card index. When a system of repair records is to be installed, there are a number of factors to be considered. First, some mechanical means of time recording is required. Many executives prefer the style of time clock that allows the workman to indicate the "start" or "stopping" of a job by stamping the time on a card. When a man starts a given piece of work, a "job" card is filled out by the foreman or clerk. On the card is indicated the nature of the work, the order number for the work, and all necessary information for any records that may be kept. The man stamps the card "in" and then performs the work. When he completes the job he stamps the card "out" and returns it to the clerk. For each new job the same routine is followed. It is essential also that the workmen see that any material used is charged to the same order number, and that the surplus is returned to the stock room with a credit slip crediting the material to the same order.

Keeping Cost Records

While there are several good ways of keeping cost records, one of the simplest is the use of a serial number for each job. The order is written or typed on a "shop order" form in triplicate. The original goes to the master mechanic for his guidance and approval before the work is started. If an estimate is required, it is prepared before the approval is given. (In case of a job calling for a large expenditure, it may be necessary for the directors to approve the expenditure.) When the approved order is delivered to the master mechanic, he places the first copy in his order file; sends the second to the stock room to permit assembly of the material; and gives the third copy to the clerk in charge of time keeping for his guidance in issuing material requisitions, making out job cards, etc.

SHOP ORDER

Order No. 3214 Date April 3, 1930, JOHN DOE MILLS, INC.

To the Master Mechanic — Charge to account L-405

Repair Loom number 157 in section 4, top floor Bldg.5

Broken crankshaft and needs general going over.

Note- This work must be done at once to prevent holding

up orders for the Sampson Co.

Total time spent _____ Rate _____ Extension _____

Total cost of materials as per attached requisitions _____

Overhead _____ Total cost _____

Entered on card record against machine _____

Remarks _____

Time cards filed and checked against order and machine upkeep _____

Fig. 1. Shop order

The order itself may be as simple as a note or it may be very precise as to wording. The way that best produces results is the one to use. An example of a shop order is shown in Fig. 1. A study of this form will show that several accounts and records can be kept from this order when it is filled in as it should be.

Records of labor and material costs against all machinery for repairs and upkeep can be computed readily. The recurrence of the same type of repairs, the prevalence of breakdowns on any one group of machines, the number of repairs required in a fixer's section over a given period, and the time actually spent in making repairs are all recorded in such a way as to be arranged for easy analysis.

MACHINE RECORD

Machine No. _____ Make _____ Date purchased _____

Location _____ Purchase price _____

Machine type or name _____

Upkeep Record

Repairs	Date	Labor cost	Material cost	Total

Replacement parts—note name of parts, price and date of purchase

Remarks

Use back of card for additional data

Fig. 2. Machine record

If, in the opinion of the management, it is wise to limit the bookkeeping to the costs of repairs, the system can be reduced to a method of yearly orders that will group all repair work according to certain fixed accounts and will produce an analysis of repair and upkeep costs only. To do this it is necessary to issue a list of order numbers that will cover the subjects and activities desired, and to charge all time to the heading designated for the class of work being done.

Typical Textile Headings

As a sample of headings that are likely to be of use in a textile mill, and which can be used as a basis for making up a list to suit the particular needs of any mill, the following is suggested:

Yearly Order List.	Order No.
Repairs:	
To buildings	1000
To piping	1001
To wiring	1002
To shafting	1003
To belting	1004
To conveyor equipment	1005
To power equipment, motors, etc.	1006
To repairs not listed above	1007
Upkeep:	
Of grounds	2000
Of buildings, painting, cleaning, etc.	2001
Indirect labor:	
Carpenters, making shipping boxes	3000
Truck drivers	3001
Sweepers	3002
Fixers	3003
Firemen and coal passers	3004
Stock room and shipping hands	3005
Yard men	3006
Miscellaneous indirect labor	3007
Machine repairs:	
To bale openers	4000
To lapping machines	4001
To cards	4002
To roving machines	4003
To spinning frames	4004
To winders	4005
To looms	4006
To gassing machines	4007
To tenter frames	4008

In making up a yearly list of this sort, it will first have to be determined how far the subdivisions of time and material costs are to be carried; then the order numbers can be assigned as required.

Sometimes it will be advantageous to use a combination of both systems. By setting an arbitrary figure, above which all proposed work must be carried against an appropriation that has been considered and passed upon by the executive in charge of that division of work, a method of shop orders such as outlined is required. Ordinary repairs are usually classed in the range of costs up to $15 to $20 and if repairs are contemplated in excess of that figure, it would be well to investigate the causes for such repairs and demand an estimate of labor and material before allowing the work to be started. By means of these estimates and their effect on the workmen in trying to complete the work within the estimated amount, it is surprising how much cheaper some repairs are made.

By providing a card index with suitable headings, the history and cost of all repairs on each individual machine in the plant can be obtained. This information is essential for valuations, inventory, or in case of possible liquidation. Useful information to be obtained from the card is the amount of repairs needed by any particular machine over a given period. For instance, if it were found that one make of winder had to be repaired every month, while another type was quite free from repairs of that nature, a mill would be justified in not installing any more machines of the first type. If loom No. 70 has had its crankshaft replaced every few months, it is evident that something is quite wrong and an investigation is necessary. If mule No. 12 is having broken gearing quite regularly, some adjustments and realignments are required.

Under such a system, a number is assigned to each individual machine and the number is painted on the machine in plain sight. Grouping of like machines in numbering is often advantageous from several viewpoints. Sometimes the machines in one department or section are numbered serially, so that any particular number is indicative of the location of the machine.

Machine Records

The card shown in Fig. 2 will give all the information usually required for machine records. On this card may be added the depreciation allowances, any extra information required for use of the auditor, or other desired data.

Inauguration of any good system of repair records will bring to the attention of the executive in charge some rather surprising conditions if no attempt has been made previously to control the expenditures on repairs and upkeep. If installed with care and thought and then kept up to date, it will tend to cut repair and upkeep costs to a minimum.

Calculating Winder Production Standards, Piece Rates, and Spindles per Operative

By Morris C. Bishop

ALTHOUGH the formulas and curves presented in this article are based on the winding of worsted and mohair, the principles involved are applicable to a variety of yarns and winders. Mr. Bishop discussed the calculation of production standards and piece rates for worsted drawing, spinning, and twisting in our June 14 issue, page 50

THE usual practice on Foster winders for worsted yarn is to assign a certain fraction of the spindles on a side to an operative and expect her to keep these spindles in operation, repairing breakage, replacing run-out bobbins, replacing cheeses, filling the bins, and keeping the machine in condition. These operations are usually done without any sequence or standardization. The watching for down spindles and walking to these spindles often takes as much as 25% of the total time and causes considerable nervous and visual fatigue. A great deal of time is wasted waiting for work and getting to the down spindle. Such a condition is unnecessary and can be corrected by a change of methods.

A winding machine costs only a few thousand dollars, takes up little floor space, uses little power, and requires only a small amount of maintenance. The life of the machine is also long, so that there is very little burden to winding. Because of this it is very important to gain the greatest possible production from the labor applied rather than from the machine. In one year several times the purchase price may be spent in direct labor applied to the machine. A winder is in a class by itself among textile machines in this respect.

Two Steps Toward Improvement

The first step in improving the methods is to make sure that the machine is running at its highest practical speed. Ribbed wood cones will usually keep the cheeses from running over the ends with the increased tension of the thread. In the mill in which these studies were conducted most of the machines were speeded up over 50%, increasing the production per machine to nearly an equal percentage and increasing the poundage of the cheeses over 10%.

The second step is to make sure that each winder has more spindles assigned to her than she can keep in operation, to make sure that she will always have work.

To start the winders on the improved methods, run the machines until all spindles are run out. Then instruct them to start at one end of their section and proceed from spindle to spindle in sequence until they get to the end of their section. Then they are to return to the starting point and start the spindles in sequence again. The number of spindles assigned will have to be sufficient so that when they return to the starting point down spindles will be waiting for their attention.

After the operatives work for a few hours under these methods they will probably complain of fatigue. Regular rest periods sitting down will partially take care of this difficulty. However, the proper solution of the fatigue problem should lie in its reduction through other means. Most of this fatigue will be caused by the fact that it is usually necessary for the operator to bend over in picking up the bobbins. This can be corrected by raising the bins and pushing them forward to clear the knees, so that arm motions only are required in picking up the bobbins and the legs are clear when leaning forward to reach the cheeses. Simplification of the guides may eliminate finger and arm motions and aid in the reduction of fatigue. The stature of the different operatives will have to be taken into consideration.

Other incidental improvements will be in the substitution of visual cheese gages for manual gages, since the cheeses are usually measured by their diameters. Also, the guides should be carefully inspected for rough edges that would cause excessive breakage. This latter point is important, because the repairing of a break takes as much time and effort as starting a full bobbin and the

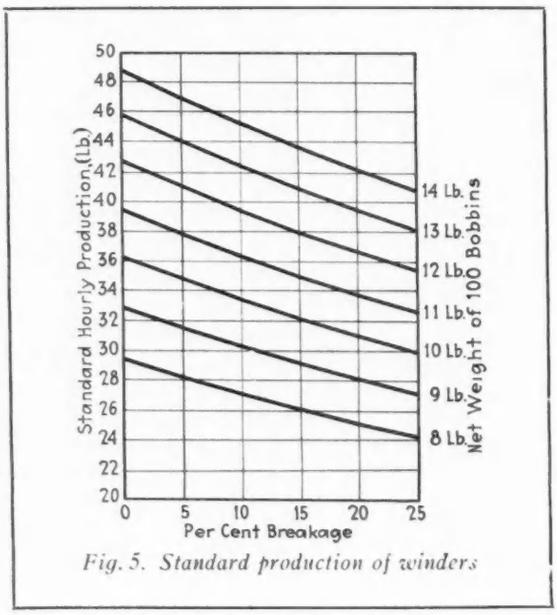
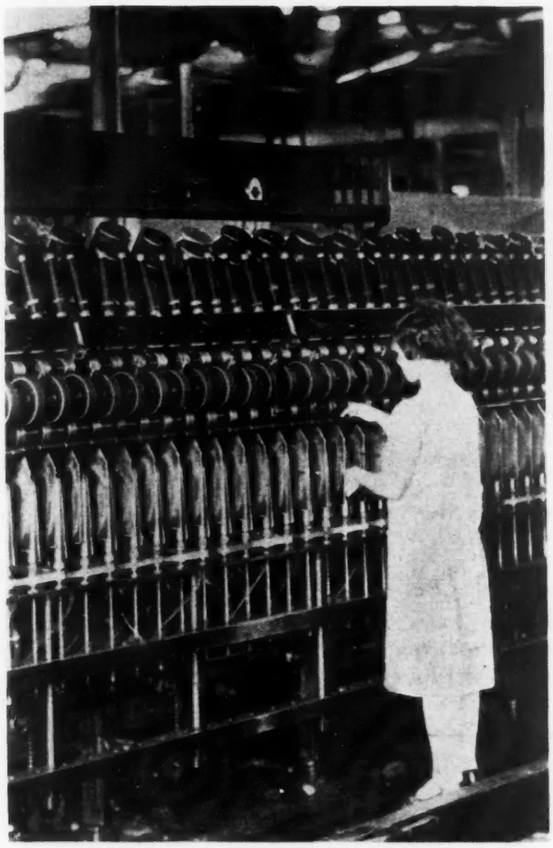


Fig. 5. Standard production of winders



Larger spinning caps often pay for themselves in reduced winding costs

net production of such effort averages only half of the yarn on the bobbin. All bobbins and cheeses should be brought to and taken from the machine by helpers. The operatives should keep their own machines clean because they are vitally interested in their condition.

Only the general principles of standardization have been treated. Conditions will vary so much that each installation of such methods will require individual treatment and solution. A complete understanding of these methods cannot be acquired without time study and mathematical solutions of spindles per operative, production standards, and piece rates. These will be treated in some detail. The investigations on which our calculations are based were conducted on Foster machines, models 12 and 101.

Study of Production

Neglecting breakage, production will be the product of ends started times the average bobbin weight. The thread size or weight affects only the number of spindles assigned to each operative.

The factors affecting standards of production will be listed as follows :

Tb = Standard time to tie in run-out bobbin.
Tc = Standard time to replace a full cheese.
Tk = Standard time to tie in a break.
Tr = Standard time allowance per tie-in for walking back to starting point.
Bw = Average weight of yarn on a bobbin in pounds.
Cw = Average weight of yarn on a cheese.

H = Bobbins per cheese, or $H = \frac{Cw}{Bw}$

$F = 1 - \frac{\text{(Fatigue allowance in per cent)}}{100}$

$L = 1 - \frac{\text{(Lost time for cleaning, rest, machine repair, etc.)}}{100}$

$P = 1 - \frac{\text{(Percentage of breakage)}}{100}$

Q = Total time given to each bobbin to accomplish its run-out.

The total time given to each bobbin to accomplish its run-out consists of the tying-in time Tb plus the breakage repair time, or $Tk \times P$, plus the time for walking back to starting point, or Tr, plus time required to replace a full cheese divided by the bobbins per cheese or Tr/H.

$$\text{Thus } Q = Tb + Tk \times P + Tr + \frac{Tc}{H} \text{ minutes.}$$

Therefore in an hour of continuous operation $60 \div Q$ would equal the total bobbins wound. Multiplying this by the bobbin weight gives the poundage per hour. Multiplying by the two allowance factors F and L gives the standard production.

$$\text{Standard production in pounds per hour} = \frac{60 \times Bw \times F \times L}{Tb + Tk \times P + Tr + \frac{Tc \times Bw}{Cw}}$$

The formula for piece rates would be:

$$\text{Piece rate in dollars per 100 lb.} = \frac{1.67 \times Q \times \text{Std. hrly. earnings}}{Bw \times F \times L}$$

No reference has been made to the counts of the yarn or machine speeds. This is because they do not affect production rates directly. However, they do determine the number of spindles that should be assigned to each operative. This will be calculated as follows:

Let
A = Spindles per operative.
R = Running time in minutes of the yarn on average bobbin.
D = Delivery rate of the roll in pounds per spindle hour.

$$D = \frac{3.1416 \times \text{Dia. of roll} \times \text{R.p.m. of roll} \times 60 \times \text{Counts}}{36 \times 560}$$

$D = .00935 \times$ Dia. of roll $\times$ R.p.m. of roll $\times$ Counts.

Counts are always expressed in my formulas in their fractional form; i.e., 1/30, 2/30, etc.

$$\text{Then } R = \frac{60 \times Bw}{D} \text{ minutes.}$$

For the most economic operating conditions the spindles assigned to each operative should just exceed her capacity to tie in ends. The proper number to assign to each operative will vary according to individual skill but may be calculated for the standard operator by using standard time values, thus:

$$A = \text{Standard spindles} = \frac{R}{Tb + Tr} = \frac{60\ Bw}{D\ (Tb + Tr)}$$

Variations from the standard number as calculated in the above formula will permit a number of combinations of spindles assigned to each operative which will be an aid in dividing a frame side. If the winding frames are arranged end to end, the difficulty of settling on the proper combinations will be partially removed, since the sections will be divided between two frames.

Typical Solution

Typical solution of known winding condition follows:

$Tb = .12$ min.
$Tc = .20$ min.
$Tk = .12$ min.
$Tr = .01$ min.
$Bw = .08$ to $.14$ lb.
$Cw = 1.5$ lb.

$$F = 1 - \frac{10}{100} = .90.$$

Items included in L are:
1 hour allowance for rest periods.
½ hour allowance for cleaning down time.
½ hour allowance for machine repair.
Totaling two hours out of 50-hour week.

$$L = 1 - \frac{2}{50} = .96$$

Roll diameter = 2.50 in.
R.p.m. of roll = 2,200.
Count = 1/28s.
$P = 0$ to $.25$.

$$D = .00935 \times 2.50 \times 2{,}200 \times \frac{1}{28} = 1.837 \text{ lb. per spindle hour.}$$

$$R = \frac{60 \times Bw}{D} = \frac{60 \times (.08 \text{ to } .14)}{L\ .837} = 2.61 \text{ to } 4.57 \text{ min.}$$

$$A = \frac{32.65 \times Bw}{.12 + .01} = 251 \times Bw.$$ (*Continued on next page*)

Tabulating the calculations:

TABLE A

Bobbin Weight Pounds	Minimum Standard Spindles
.08	20.1
.09	22.6
.10	25.1
.11	27.6
.12	30.1
.13	32.6
.14	35.1

With this table as a guide the proper number of spindles per operative may be determined, knowing the average bobbin weight.

The piece rates per 100 lb. are calculated as follows:

$$\text{Piece rate} = \frac{1.67 \times Q \times \text{Std. hrly. earnings}}{Bw \times F + L}$$

$$= \frac{1.67 = .45\ (.12 + .01 + .12P + .20\ Bw\ /\ 1.5)}{Bw \times .90 \times .96}$$

$$= \frac{.869\ (.13 + .12P + .0133\ Bw)}{Bw}$$

$$= \frac{.113 + .1042\ P + .0116\ Bw}{Bw}$$

Tabulating the calculations:

P	$.1042P$	$.1042P + .113$	Bw	$.0116\ Bw$
0	0	.1130	.08	.00928
.05	.00521	.1182	.09	.01043
.10	.01042	.1234	.10	.01160
.15	.01563	.1286	.11	.01276
.20	.02084	.1338	.12	.01391
.25	.02605	.1390	.13	.01510
			.14	.01624

With these figures the values of $0.133 + 0.1042P + 0.0116\ Bw$ may be set up for different breakages and bobbin weights, thus:

Values of Bobbin Weight (Bw)

P	.08	.09	.10	.11	.12	.13	.14
0	.12228	.12343	.12460	.12576	.12691	.12810	.12924
.05	.12748	.12863	.12980	.13096	.13211	.13330	.13444
.10	.13270	.13385	.13502	.13619	.13733	.13582	.13966
.15	.13791	.13906	.14023	.14139	.14254	.14373	.14487
.20	.14312	.14427	.14444	.14660	.14775	.14894	.15008
.25	.14833	.14948	.15065	.15181	.15296	.15415	.15529

Dividing each of the values in the preceding table by the bobbin weight gives the piece rate:

Bobbin Weight

P	.08	.09	.10	.11	.12	.13	.14
0	1.530	1.370	1.246	1.144	1.057	.985	.923
.05	1.593	1.430	1.298	1.191	1.102	1.023	.960
.10	1.660	1.486	1.350	1.240	1.146	1.063	.996
.15	1.727	1.545	1.402	1.287	1.188	1.103	1.032
.20	1.790	1.602	1.454	1.336	1.230	1.143	1.070
.25	1.853	1.660	1.5065	1.380	1.273	1.185	1.108

The piece rates are shown in curve form from these figures in Fig. 6.

Standards of production per operator hour may be calculated as follows:

$$\text{Std. Prod.} = \frac{.45}{\text{Piece Rate}}$$

Bobbin Weight

P	.8	.09	.10	.11	.12	.13	.14
0	29.4	32.8	36.2	39.4	42.7	45.7	48.7
.05	28.2	31.5	34.7	37.8	40.9	43.7	46.9
.10	27.1	30.3	33.4	36.3	39.3	40.8	45.2
.15	26.1	29.1	32.1	35.0	37.9	40.4	43.6
.20	25.1	28.1	31.0	33.7	36.6	39.4	42.0
.25	24.3	27.1	29.9	32.6	35.3	38.0	40.7

These values are shown in curves in Fig. 5.

A study of the two sets of curves showing production standards and piece rates will clearly reveal the loss of breakage and the cost of unfilled bobbins. Under the irregular methods of winding, these points were recognized to be a cost factor, but in these methods the losses themselves may be accurately evaluated.

The factor of full bobbins cannot be emphasized too strongly. Often the savings in winding cost alone will pay for the investment for larger spinning caps in two years, if small caps are being used and the thread can be spun on large caps. The same principle applies to winding from twister bobbins.

Cheese weight is a factor, but obviously only a small one in affecting production rates.

The values given in the two sets of curves are typical for winding from worsted and mohair spinning bobbins. The time study values are accurate and reasonable. The standards of production have been borne out in practice as attainable, representing a large increase in production over previous methods.

The principles of basing production on knots tied and arranging operations in regular sequence are not confined to worsted and mohair threads alone. These principles may be applied to other threads and equipment.

To illustrate the practical application of the charts, let us take a typical condition and apply the charts to it. Take winding single 28s from spinning bobbins weighing 11 lb. per 100. If the roll diameter is 2.50 in. and turns at 2,200 r.p.m., from Table A, the standard number of spindles per operative is 27.6. If the frames have 50 spindles per side, two operatives who are slightly below standard capacity would be kept busy on a frame side.

At the start of the run the foreman of the winding room would count the breakage. Let us say that it averaged around 10%. Referring to Fig. 5, standard production on this yarn will be 36.4 lb. per operative hour. From Fig. 6 the piece rate and standard cost is $1.24 per 100 lb.

If that lot comprises 1,000 lb. the standard time to complete the run will be

$$\frac{36.4 \times 2}{1{,}000} = 13.7 \text{ hr. for a frame side of } 2 \times 27.6 = 54.2 \text{ sp.}$$

However, the frame side has only 50 spindles, so that the corrected time will be

$$\frac{13.7 \times 54.2}{50} = 14.8 \text{ hours for a frame side of 50 spindles.}$$

It is apparent that the only conditions which the planning department cannot control are the bobbin weight and breakage. However, past performance on similar yarns will be sufficient indexes as to how the thread will be expected to run. Any discrepancy of large proportions in such work should be investigated.

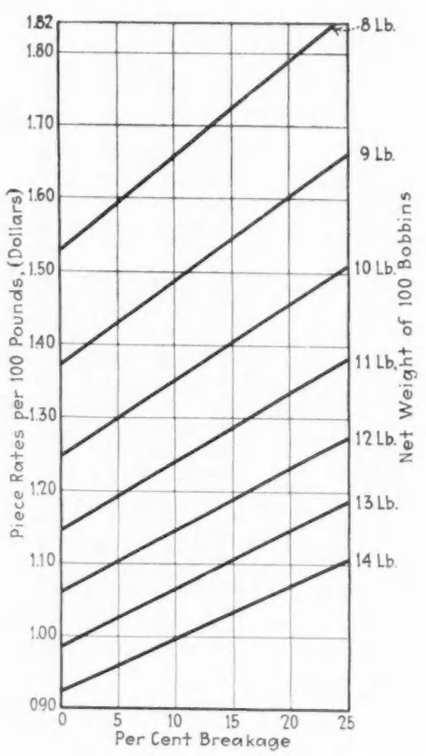
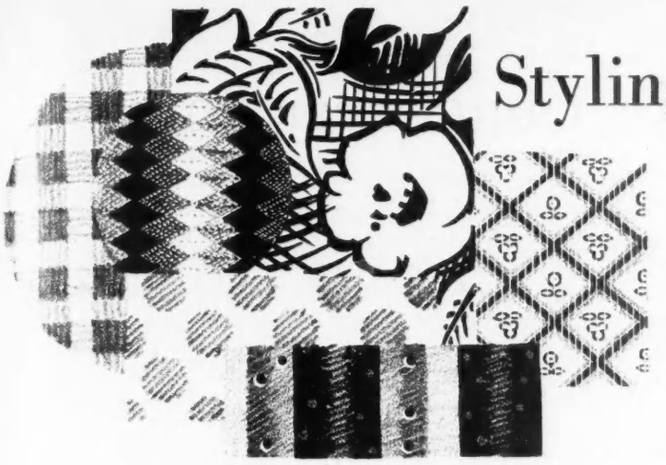


Fig. 6. Piece rates for winding



Styling in the Modern Way

By Joseph A. Golden

IN selling agencies where the business runs into the millions and where rests responsibility for keeping a number of mills running, each mill manufacturing a different type of cloth, it is found best to have one man responsible for the styles and sales of each mill. In this way it is possible for him to keep in closer contact with the desires of the particular branch of the clothing industry he is attempting to style goods for.

It is impossible for a man to sit in his office away from his customers and attempt to predict how trends are shifting or will shift. A system of salesmen's reports are helpful but cannot take the place of personal contact and observation. It is not sufficient for a stylist to know that shadow stripe effects will be good. He must have the ability to work out these patterns properly.

Sample lines are an expensive proposition to a mill and by having a definite knowledge before laying out a line of what each color and pattern will do in the blanket it is possible to keep the blanket work down to a minimum. The usual number of samples shown by a mill is about 2½ times the number of looms. This varies of course with the price and type of cloth offered. This number should be increased in unsettled times.

We will take for granted that the fabric and price have already been decided on. The next things to consider are: (1)—Ground colors; (2)—Decorations; (3)—Weave effects.

Most lines have their inception from three sources: (1)—Foreign samples; (2)—The previous season's best sellers which especially came in strong the latter part of the season; (3)—The best sellers of a decade ago.

It is a recognized fact that style trends work in cycles. One successful stylist told me he has a trunk filled with samples of best selling patterns and colors of the last 20 years. These are placed in layers which he uses today in successive season styling.

It is very possible that there are stylists who do not use any of these sources for their ideas and if they do, they use them for last minute fill-in purposes, rather than as a basis.

The stylist goes over his material and makes his selection for colors and patterns. In working on his samples from which he intends to get his color line he divides them into such groups as grays, blues, browns, etc. Part of the warp and filling yarn is taken out of each sample and gone over carefully. Those running too close to each other are eliminated as well as those least satisfactory for some reason or other.

The number of colors used in blankets varies of course with the size of the line which is to be made. In mills making suitings, if the sample work is done on a broad loom weaving the blanket to finish 56 to 60 inches, it is best to use 16 warp shades across the blanket. The filling colors may run anywhere from 24 to 30 or even more.

In working on weave effects for pattern work in blankets, the stylist who has a technical knowledge of designing enjoys a distinct advantage. Oftentimes patterns are sent down to a mill which can never turn out satisfactorily in the texture to which pattern is being transferred and in the blanket the pattern will have only a slight resemblance to the pattern in the original sample.

In a good many types of fabrics the decorations can make or spoil a potential good number. The price at which the fabric is to be sold determines the kind of decorations to be employed and the number of ends that can be used per inch. The blanket work should include various kinds of decoration threads in different colors as well as in various counts.

When blankets come through they are gone over and selections cut out. These are laid out in ranges and sized up in a general way to see if all necessary pattern effects that may be called for are included. Each selection is studied and then passed on or revised in the endeavor to obtain the best effect possible. Weave effects that seem too bold are toned down—stripings that are too wide are narrowed and so on down the line. Ends of all numbers are made for selling purposes, and the line is ready to be shown.

Clothing manufacturers who make a very finely tailored line and who sell their clothes for $10—or $15—more than another manufacturer who uses the same fabrics with inferior tailoring, insist on having their patterns confined to them. In a good many cases these manufacturers employ their own stylists who work in collaboration with the mill stylist to make a line of confined patterns.

To the outsider, the term stylist would seem to indicate that the man employed in that position would have as his main responsibility the production of a good looking line. To the woolen stylist however, this is only the means to an end. His ultimate objective is keeping his mill in a sold-up condition and it is on that basis that a man is considered to have succeeded or failed in his task.

The time must come when the successful mill will originate its styles in its own designing department. The men's wear designer of the future will not be given a sample to duplicate. He will design his own material. Sample cards at the mill will turn out original mixes instead of duplicating yarns submitted. The dye house will not match shades, but will work out original formulas. These new conditions will naturally affect the stylist. In addition to his ability to predict and recognize trends he will be a technically trained man who is capable of assuming the roll of head designer and head colorist in action as well as in title.

ABSTRACT of a paper presented at the Twenty-ninth Annual Meeting of the Alumni Association of the Philadelphia Textile School. All rights reserved by the author.

Further Rayon Gain in Underwear Forecast

A SURVEY of the trend of men's and women's underwear sales has been completed by the National Retail Dry Goods Association, and the results published. Experiences of 68 retail stores located in 25 cities has been tabulated. The report has been prepared by Alexis Sommaripa and W. H. Hooper, Jr., and was financed by the Du Pont Rayon Co. Excerpts from the report follow:

Women's Underwear Trend

Eighty-seven retail store buyers predict for the fiscal year of 1930 that their underwear sales in dollars will be distributed as follows: silk, 37.4%; rayon, 41.1%, and cotton, 21.5%.

From a comparison of women's underwear sales in this forecast with the fiscal year, February, 1929 to February, 1930, it can be seen that retail stores expect to do 1.4% less of their business in silk underwear and 1.5% more in rayon underwear, while the position of cotton will remain *status quo*, compared with 1929.

It is interesting to note the growing importance of the dollar sales of woven underwear, amounting to 45%, compared with 55% for knit underwear. This indicates a relative gain of over 25% in the sales of woven undergarments which undoubtedly has been enhanced by the vogue for rayon crepes. Silk is the leader in woven underwear taking 28% of the relative value of all underwear sales, whereas rayon knit underwear, taking 34% of this business, is the most important in the knit underwear field.

Taking the knit and woven underwear together, the report shows the rayon accounts for 39.6%, silk, 38.8%, and cotton, 21.6% of the value of all women's underwear sales.

Though 48% of the vests, 58% of the bloomers and 31% of the step-ins were of rayon knit construction, it is interesting to note the growing popularity of this fabric in pajamas, union suits and night gowns, where it accounts for 37%, 19% and 17%, respectively, of their sales. Rayon woven fabric, particularly crepe material, has become a very important factor in slips, where it represents 40% of the slip business during the fiscal year of 1929, compared with 23% in the preceding year. Silk woven material had its widest use in slips and step-ins, taking 45% and 44%, respectively, of the sales of these garments and 38.5% and 27.5% of the sales of nightgowns and pajamas. Glove silk material, on the other hand, was most important in vests and bloomers, while in step-ins and union suits it accounted for 17% and 12%, respectively, of the value of these sales.

Cotton woven underwear had its largest relative use in nightgowns, amounting to 39%; 29% in pajamas and 13% in slips. Cotton knit fabric, which is becoming less important in women's underwear each year, had its largest use in union suits, accounting for 64% of their sales and 20% of the vests. In no other women's garment did cotton knit cloth account for more than 4% of the value of sales.

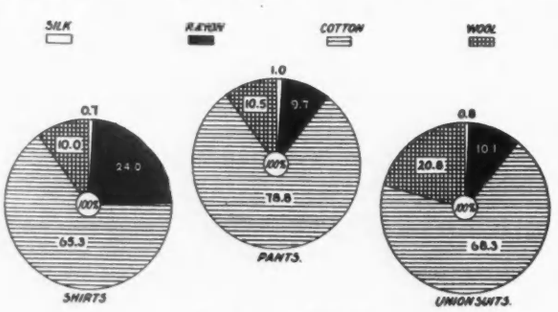
Rayon warp knit fabric is gaining in popularity. Nineteen per cent of the value of rayon underwear sold in the knit departments is of warp knit construction, while for all the departments combined it represents 12% of the rayon underwear sold.

Men's Underwear Trend

If the expression of 68 underwear buyers prevails for the fiscal year of 1930, men will buy 17.6% of their underwear in rayon, 67.3% in cotton, 14.6% in wool and 0.5% in silk. Rayon underwear is thus expected to increase over its share of 13.4% in the fiscal year 1929, while cotton and wool will each show decrease.

That cotton plays a very necessary part in men's undergarments is proven by the fact that 65% of the value of men's shirts, 79% of pants and 68% of union suits are constructed of cotton. Wool, on the other hand, has its greatest strength in union suits where it accounts for one-fifth of these sales, whereas rayon is most important in men's athletic shirts where it takes almost one-fourth of this business. Rayon accounted for about one-tenth of the value of sales of union suits and pants, being slightly more important in the former.

The relative importance of shirts and pants has increased 10% during Feb. 1, 1929, to Feb. 1, 1930, compared with the corresponding period in the previous year. Union suits, on the other hand, though still accounting for over one-half of the value of men's underwear sales declined 9% in their relative importance compared with the preceding period. It is still the consensus of opinion among retail store buyers that the two-piece garments are growing more important all the time at the expense of union suits. Sales of men's trunks showed a relative gain partly accounted for by the growing popularity of rayon.



Subdivision of men's underwear by different materials as shown in retail sales from Feb. 1, 1929 to Feb. 1, 1930.

Table I. Per Cent Gain or Loss in Dollar Value of Retail Underwear Sales

	Feb. 1 to May 1 1930 vs. 1929	1929 vs. 1928	1928 vs. 1927	1927 vs. 1926	1926 vs. 1925
Women's Underwear					
Rayon	+2.5	+10.3	+22.9	+26.2	+45.0
Cotton	—4.4	+ 0.3	—11.5	—11.6	—33.0
Silk	—3.2	+ 2.2	— 0.8	— 0.5	+ 8.0
Men's Underwear					
Rayon	+6.1	+22.8	.....	.....	.....
Cotton	—0.6	+ 4.6	.....	.....	.....
Silk	—1.3	+ 1.0	.....	.....	.....
Wool	—5.0	— 7.9	.....	.....	.....

Table II. Relative Value (Per Cent) of Various Materials in Retail Underwear Sales, Feb. 1, 1929, to Feb. 1, 1930

	Women's		Men's	
	Knit	Woven	Knit	Woven
Rayon	34.2	5.4	13.2	0.2
Cotton	10.3	11.3	31.0	39.0
Silk	10.8	28.0	0.5	0.3
Wool	....	....	15.8	0.0

Table III. Relative Importance of Various Items of Women's Underwear, by Departments, Sold by Retail Stores from Feb. 1, 1929, to Feb. 1, 1930

	Knit Dept.	Muslin Dept.	Underwear Dept.	Total All Depts.
Vests	17.9	1.3	8.8	9.3
Bloomers	36.9	8.9	24.1	23.2
Step-ins	10.0	15.3	14.6	12.9
Union Suits	24.5	1.5	6.9	9.8
Slips	1.8	33.4	19.3	20.7
Nightgowns	3.6	25.9	14.4	14.0
Pajamas	5.3	13.7	11.9	10.1
	100.0%	100.0%	100.0%	100.0%

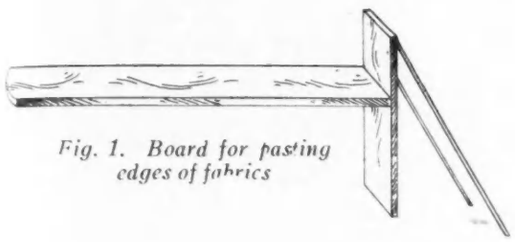


Fig. 1. Board for pasting edges of fabrics

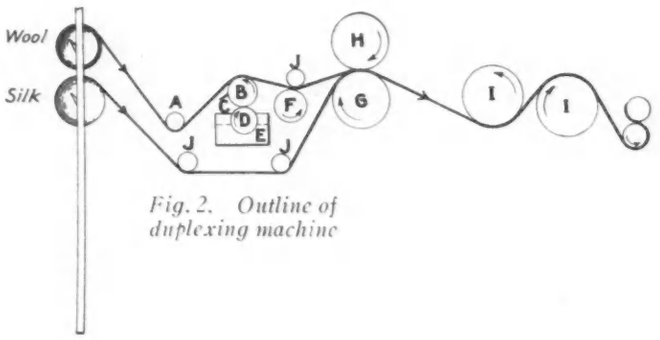


Fig. 2. Outline of duplexing machine

Pasting Duplex Glove Fabric

Our Questions and Answers Department recently received the following inquiry from a reader: "Will you kindly inform us what methods, materials, and equipment are used in pasting duplex glove fabrics composed of a knitted wool fabric and a silk jersey lining." It is believed that the procedure outlined in the accompanying article, which was written to supply this information, will be of considerable interest to other readers of TEXTILE WORLD.

IN ORDER to make a satisfactory duplex glove fabric, such as one made of a heavy wool fabric and a light silk or rayon, it is necessary to manufacture both pieces of cloth with this end in view. The knit tubular goods must be split in such a manner that the two flat pieces of fabric can be duplexed in much the same way as would be done in the case of two pieces of woven goods.

This is accomplished most easily by knitting the goods with one or two needles out so as to give a drop-stitch line to be used as a splitting guide. The goods are—in the case of the woolen fabric—fulled, scoured, and dried in the tubular form. Just before the goods are dried, the needle-out mark is pasted on either side. This gives the goods a good edge which will not curl during the duplexing operation.

The paste used is made up by mixing 14 lb. of pearl starch and 7 lb. of Feculose T with 25 gal. of cold water. When the paste is well mixed, steam is turned on, the mixture brought up to a boil as quickly as possible, and cooked for one hour. Water is then added to bring the total volume up to 50 gal. This paste will keep a day or so without souring. Feculose T maintains the paste at about the same consistency even after it is cooled down.

The woolen cloth is straightened out so that the guide mark is on top and is then drawn onto a smooth board. This board is similar to an ironing board, but is about 15 ft. long. As the cloth is drawn onto the board (see Fig. 1), the operator takes a brush with short bristles (about 1½x6 in.), dips this into the pail of paste, and daubs it along either side of the needle-out guide. When the entire seam is pasted, the fabric is sent to the dryer and dried. As it is unrolled it is split, and next is wound on a paper shell as a flat roll of cloth.

Equipment for Duplexing

After the silk or rayon lining has been dyed and extracted, it is pasted in somewhat the same way, but fabrics as thin as this are best pasted with a narrow paint brush, rather than the larger brush. The lining is then dried, split, and rolled up flat the same as the wool.

A special machine is necessary in order to do a good job of duplexing and to produce a fabric which will not waste in cutting. The working parts of such a machine are shown in Fig. 2. It consists of a framework with supports to hold the rolls of cloth under a moderate tension. The roll of wool is placed in the top support in such a way that the cloth comes down under guide roll, *A*, and the back of the fabric passes over the diamond-shaped engraving of copper roll, *B*. The size is retained in box, *E*, which is equipped with a closed steam coil to keep an even heat. Felt-covered roll, *D*, furnishes the size to the copper roll. Doctor blade, *C*, scrapes off the excess. Brush, *F*, further spreads the size coating evenly over the woolen cloth.

The silk lining and the wool join at the nip of rolls, *H* and *G*. The top roll, *H*, is heated, and the pressure at the nip can be varied. A heat of 15-lb. steam pressure is sufficient to insure a good bond to the two fabrics. One or more copper dry cans, *I*, to provide enough heat to thoroughly dry the fabric, together with the rolling-up device, complete the machinery.

In place of starch and Feculose a special size may be employed. This size is made from selected vegetable gums and gelatins, together with suitable preservatives to keep it from turning rancid, mildewing, and molding. It imparts the maximum bond, but at the same time is not too stiff.

The diamond engraving of the copper roll is about $\frac{3}{8}$ in. in diameter and is cut to a depth of $\frac{1}{64}$ in. If the size is applied lightly enough and the brush, *F*, spreads the size on evenly—in other words, just dampens the cloth—it will not affect the shade of the lining, but if applied in too large amounts, it will strike through the silk and darken the shade. Brush, *F*, should be cleaned at frequent intervals to keep it free from lint and excess size.

Fabrics for Children's Play-Suits

By K. Melvina Downey and Dorothy M. Ellis

Division of Textiles and Clothing, U. S. Bureau of Home Economics

WITH the variety of textile products now offered by American manufacturers, it should be no longer necessary for the healthy, active child to give up out-of-door games on rainy or cold days. A study of fabrics available for play-suits of appropriate design was undertaken recently by the U. S. Bureau of Home Economics. Both cotton and wool materials have been made into suits in accordance with the descriptions in *Leaflet No. 54*, U. S. Department of Agriculture, and are being observed under actual wearing conditions in various parts of the country. Particular attention has been given to the need for light-weight clothing, as well as to designs that do not restrict active play.

The nature of the various textiles considered can be seen from the photographs (Figs. 1 to 9), in which the samples are shown actual size. All the fabrics were examined under standard conditions to determine thread count, weight per square yard, yarn count, thickness, tensile strength, elongation at break, bursting strength, resistance to tear and to wear, air permeability (or the ease with which air passes through the fabric), heat-retaining value, and washability. Acknowledgement is made to the U. S. Bureau of Standards for the use of equipment in the Textile Testing Laboratory for many of these tests. Additional tests of the proofed fabrics were made in order to determine their resistance to the passage of water.

In Table I information is given as to the general description, strength, and stretch at break for a representative list. The Grenfell[1] cloth given here is the British fabric, which was found to be effective in Labrador as an outer covering impervious to wind and moisture. From the illustrations (Figs. 10 and 11) one may compare this material with the American unclassified cloth, which seems more adapted for the hard wear to which play-suits are subjected. It is evident that the latter is a plain weave while the Grenfell is a twill. The two-ply yarns in both fabrics have been made from long-staple cotton. According to the laboratory determinations, the yarn of the unclassified cloth is about 50s count, and that of the Grenfell, though much finer, is less than 100s. Measurements of the ply yarns with a precision twist counter give a low order of twist for the Grenfell.

Grenfell and Duck of Two-Ply Yarn

The duck fabric (Fig. 12) is the only other cotton cloth tested that was made of two-ply yarn. The yarn in this has a single count less than half that of the unclassified cotton fabric. In fact, the Grenfell and the mechanical cloth are the only fabrics having higher yarn counts than the unclassified cotton cloth. While the duck is most resistant to wear and to tear, it seems somewhat bulky and stiff for young children's garments.

In considering the results given in Table I, some comments are necessary on the measurements of the thickness. These were obtained with a micrometer thickness gage which exerted constant pressure on a given area of fabric. This apparently gives a fair comparison for the unnapped cotton fabrics tested. Even these fabrics vary in different parts of the cloth as much as 5% from the average. With certain napped fabrics the variation was greater, especially for the woolen materials. Some estimate of the comparative compressibility of the blanket materials may be formed from these measurements. Blanket material *B* was much more napped than *A*, so that the former was more compressed by the constant pressure; but there seemed to be very little dif-

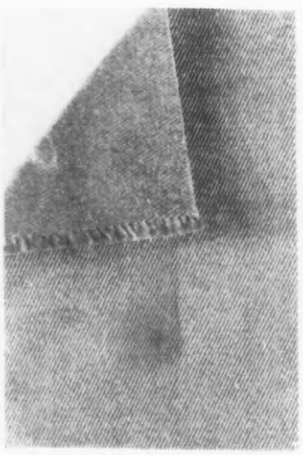


Fig. 1. Grenfell

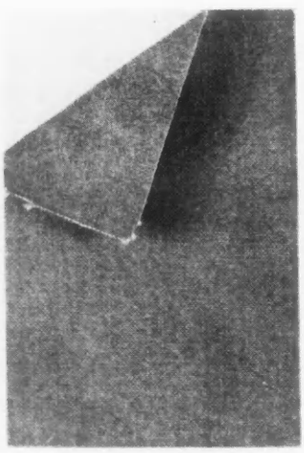


Fig. 2. Unclassified

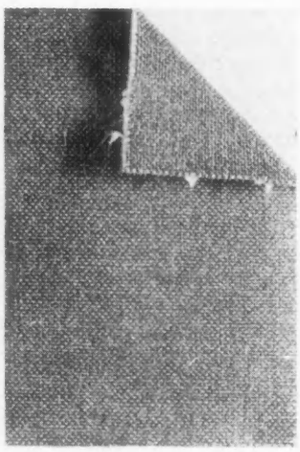


Fig. 3. Duck

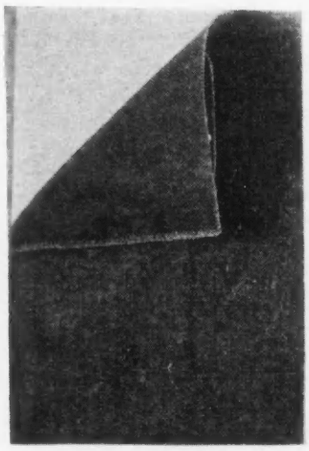


Fig. 4. Brown Sail

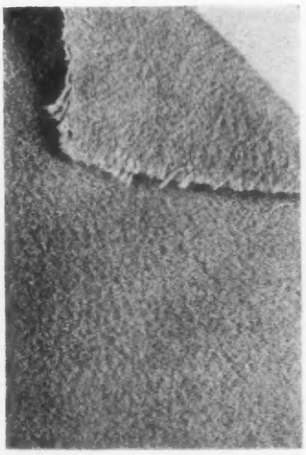


Fig. 5. Cotton Suede A

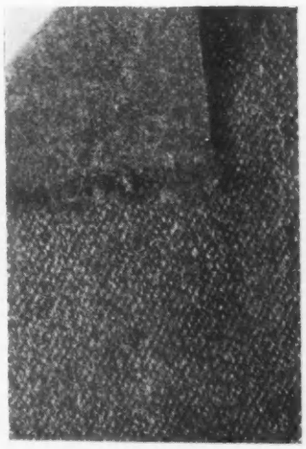


Fig. 6. Covert A

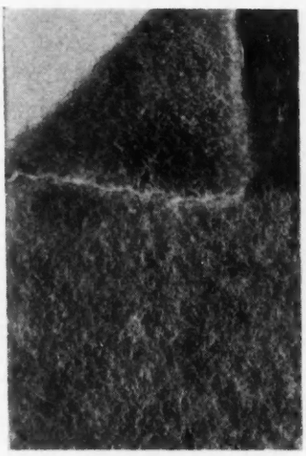


Fig. 7. Blanket Material A

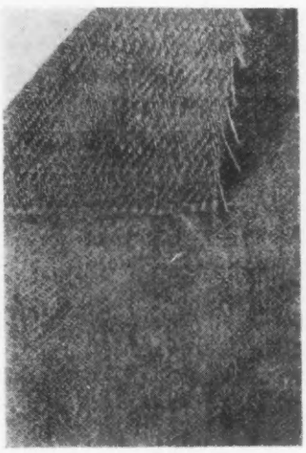


Fig. 8. Kasha

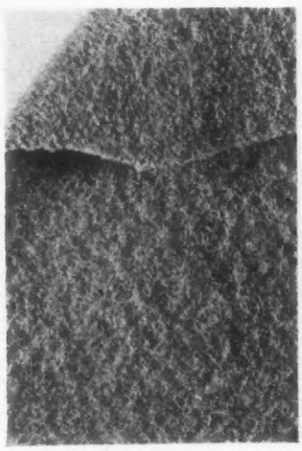


Fig. 9. Flat Knit

ference in the apparent thickness of these fabrics when they were measured between two parallel plates with no appreciable pressure.

Breaking Strength

Breaking strength according to the standard strip method was measured by means of the Scott tester with a 3-in. back-and-front jaw. The distance between the top and bottom jaws was 3 in. There was a noticeable decrease in the breaking strength of many of the cotton fabrics on ageing over a period from four to six months. However, the duck and the unclassified cotton did not change appreciably from the initial values listed here. Of the woolen materials, the Kasha was the only one showing lower values after aging. It is interesting to note the difference in percentage of stretch at break between the warp and filling of certain fabrics, such as the cotton suedes, which showed a queer puckering effect when subjected to strain. From Table I it is apparent that the dyed sail cloths are different in break and stretch from the sail in the gray.

Bursting strength was determined by means of the Scott tester with the steel-ball attachment, in which the regular size ring and ball were used. High bursting values (115 lb. or above) were given by the duck, the unclassified cotton, the gray sail, and the cotton suedes. All the other cotton fabrics were comparatively low on this test (below 75 lb.). The dyed sails were very much lower than the sail in the gray. Of the woolen materials, the coverts and the blanket material *A* gave the highest average values, which ranged from 100 to 115 lb.

To obtain the resistance to tear, a trapezoid-shaped sample was placed in the Scott tester so that its sides were parallel to the jaws and its shorter base perpendicular to them. For these tests the distance between the jaws was 1 in. When both warp and filling were considered, the duck gave the highest tear resistance of all the fabrics tested. The unclassified cotton was high, but considerably lower than the duck. The sail in the gray compared favorably with the unclassified cotton, and the Grenfell gave values less than one-half those of the unclassified cotton. The dyed sails were of the same order as the Grenfell on the warp, but higher on the filling. Of the woolen fabrics, the coverts and the blanket material *B* gave high values.

Resistance to Tear

The cotton suedes are interesting in that they gave such relatively high tear resistance on the filling. However they, as well as the gray sail, fell down on the wear tests. For garments manufactured from cotton suede, careful directions for washing should be given. Suede *B* was found to felt appreciably during a mild washing process with neutral soap, and one brown, proofed suede deteriorated extensively on its back surface during the washing. This latter defect was doubtless due to improper control in the proofing process. Cotton suedes to be used for children's play garments could be improved

from the safety point of view if given a permanent fireproof treatment.

The list of comparative values for resistance to abrasion is given in Table I. Since the duck is the most resistant to wear of all the fabrics tested, it is listed as 100 for this group of fabrics. The unclassified cotton comes next, and at considerable distance the rest of the cotton fabrics. Covert *A* compares favorably with the unclassified cotton.

Abrasion measurements on all fabrics were obtained with the Wyzenbeek tester, and additional observations on some materials were also made with an oscillating-type machine devised by the U. S. Bureau of Standards. With ordinary abrasives many of the fabrics became smooth with no decrease in strength, while the more severe rubbing agents cut the cloth without giving any measure of normal wear. By using round sand this difficulty was overcome. The sand was sifted uniformly over a freshly glued surface, which was then allowed to dry. With this abrasive surface it was possible to form a comparative estimate of the fabrics, which were all rubbed under tension. Some of the weaker fabrics were also tried with very little tension; but, to approximate the severe conditions to which play-suits may be subjected in actual wear, the greater tension seemed necessary.

From a general survey of the results obtained with the mechanical tests for resistance to tear and to wear, for bursting, and for breaking strength, the duck and the unclassified cotton rank on the whole the highest of the cotton fabrics, and covert *A* the highest of the woolens. For the play-suits of young children, the unclassified cotton seems preferable to the duck, since it is lighter in weight and also more pliable. However, the duck ought to be especially useful for boys of school age in many rural districts, where it is the custom in cold weather to wear overalls as an outer covering in addition to the regular clothing.

Water Repellence

All the unstarred fabrics listed in Table I had been given waterproof treatment, but they repelled water in varying degrees. Only the duck, the Grenfell, and the unclassified cotton passed satisfactorily the three types of showerproof tests used,[2] the funnel, the drop, and the hydrostatic. After several washings these three materials still held water for 24 hours in the funnel test. The coverts even held water better after washing than before. The covert samples used in the drop test resisted approximately 200 drops, though they did not withstand for one hour the hydrostatic test in which there was 20-cm. pressure of water. The sail in the gray was satisfactory on the funnel test both before and after washing, but the dyed sails did not hold up so well on any test. Some coated fabrics, which have not been listed in Table I, were tested and found to be generally very irregular in their resistance to the passage of water. This coating was also not resistant to the condition of hard wear in abrasion.

All fabrics were given a mild washing process, in which neutral soap was used with no washing or rinsing temperatures above 85° F. For the cotton materials there was no shrinkage on the warp greater than 2 in. per yd. Some samples of the drill and the duck gave results that high. The largest shrinkage on the filling occurred in the Grenfell, the values of which varied from $2\frac{1}{2}$ to $3\frac{1}{2}$ in. per yd. For the woolens, the area loss, a quantity which includes both shrinkage and felting, gave the following results in sq.in. per sq.yd.: Kasha, 11.2; plain-knit woolen, 6.2; blanket material *A*, 5.0; covert *A*, 1.75; blanket material *B*, 0.56; covert *B*, 0.20. Covert *A* had the highest shrinkage on the warp (3.5 in. per yd.), and the Kasha had the highest filling shrinkage (5.3 in. per yd.). The results suggest that the manufacturer will often find it to his advantage to give attention to laundry tests in the case of fabrics to be sold for service suits.

As it was especially desirable to make some comparison of the wind resistance of the various fabrics, the air permeability was measured. This quantity as tabulated here is defined as the number of cubic feet of air which will pass through 1 sq.ft. of the fabric in 1 min. for 1 lb. pressure difference under the required standard conditions of measurement. It is evident that the lower the permeability value, the greater the resistance of the fabric to the passage of air. The general method of measurement was similar to that described by Sale and Hedrick[3]. But the observations were made on the new appa-

Table I—Average Results of Mechanical and Physical Tests on Fabrics for Children's Play Suits

Fabric	Description	Thread Count Threads per Inch Warp	Thread Count Threads per Inch Filling	Weight Oz. per Sq.Yd.	Thickness in Inches	Breaking Strength Lb. per In. Warp	Breaking Strength Lb. per In. Filling	Stretch at Break Per Cent Warp	Stretch at Break Per Cent Filling	Resistance to Abrasion Relative Rating	Air Permeability (Cu.Ft. per Min.)/(Sq.Ft. per Lb. Pressure)	Heat Resistance Degrees C. + (Calories per Sec.) per 1,000 Sq. Cm.
COTTONS												
Grenfell cloth	2/2 twill, 2-ply yarn warp and filling	192.0	92.4	4.96	.0106	113.1	42.8	12.3	6.5	12—14	3.5	5.31
Unclassified	Plain weave, 2-ply yarn warp and filling	99.6	87.4	6.14	.0109	80.9	100.2	22.6	15.8	35—45	1.4	5.24
Sail (in gray)	Plain weave	99.6	103.6	5.08	.0106	77.3	85.7	25.5	19.7	14—16	3.8	5.33
Sail (brown)	Plain weave	106.0	98.0	4.98	.0092	66.8	50.3	11.7	22.5	6	3.1	5.00
Sail (olive drab)	Plain weave	106.0	99.0	4.98	.0093	72.0	74.7	12.9	24.5	6	2.7	....
Duck	Plain weave 2-ply yarn warp and filling	62.8	56.6	9.28	.0178	117.6	107.4	26.7	18.5	100	1.9	5.98
Drill	2/1 drill	104.9	60.9	5.28	.0124	81.7	31.8	10.0	14.0	8—11	12.7	....
Mechanical	Plain weave	128.4	130.8	2.83	.0073	50.2	37.8	11.3	18.9	4— 7	13.1	—3.55
*Suede *A*	$\frac{1\ 1}{6\ 2}$ = 10 harness filling effect, satin weave	86.9	140.0	9.78	.0398	65.6	47.9	6.9	22.6	10—11	18.1	6.66
*Suede *B*	$\frac{1\ 1}{4\ 2}$ = 8 harness filling effect, satin weave	77.0	100.0	10.92	.0345	76.8	58.6	5.9	20.1	8—10	12.5	6.02
WOOLENS												
Covert *A*	3/2 twill	62.0	65.0	12.26	.0395	65.4	29.3	45.0	27.9	29—30	9.5	6.08
Covert *B*	2/2 twill (more surface cover than *A*)	60.0	58.0	12.1	.0433	56.9	27.9	32.6	28.8	10—11	15.5	7.03
*Blanket material *A* (napped)	2/2 reverse twill	28.0	22.8	15.16	.070	34.7	23.9	23.0	28.1	8	102.0	12.42
*Blanket material *B* (napped)	Crow-foot warp effect	28.0	28.0	12.4	.062	27.4	12.6	15.7	26.7	6	111.0	12.0
*Kasha	2/2 twill	82.0	67.0	3.76	.0160	21.2	9.5	21.7	15.9	3	94.0	—4.44
*Flat knit	Plain (irregular as to construction and nap)	18.8 Wales	22.5 Courses	13.22	.0570	....	....	....	....	.....	80.0	9.33

*Not waterproofed.

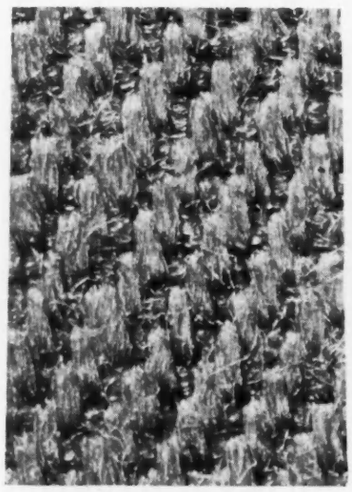


Fig. 10. Grenfell cloth (Magnification 20)

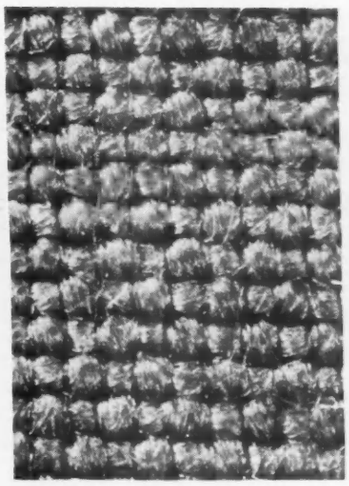


Fig. 11. Unclassified cotton (Magnification 20)

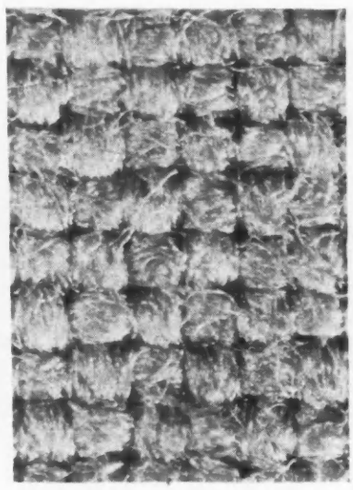


Fig. 12. Duck (Magnification 20)

ratus developed in the U. S. Bureau of Standards. A paper giving a detailed description of this apparatus is being prepared by that bureau.

Of all the fabrics tested, the unclassified cotton is the most impervious to air, though the duck is a close second. It is apparent that the sail cloths and the Grenfell all have the same order of high air resistance, particularly when the individual variation from the average is considered for these fabrics. Covert *A*, while more permeable than the Grenfell, allowed less air to pass through than any other woolen fabric.

Although the low permeability fabric as an outer covering is especially resistant to wind and moisture, it is necessary in a very severe climate to wear under it a fluffy material in which there are many minute air spaces. The blanket materials are examples of warm, porous, light-weight cloths which may be worn under the proofed fabrics for extreme conditions. In Table I they stand highest in heat-retaining value, and they also have the highest air permeability. However, their use seems unnecessary for active children except in severe cold, particularly since health authorities state that heat production is greatly increased by exercise.[4] According to tests, a single layer of proofed material stretched over any surface is not warm; but, if it is worn loosely enough over regular clothing, it ought to give sufficient protection for children engaged in play activities under average conditions.

Heat-Retaining Value

The general method used to determine the heat-retaining value of fabrics has been described by Sale and Hendrick.[3] The test sample was placed horizontally upon the surface of an electrically heated plate, and a determination was made of the current required to keep the plate at a given temperature under specified conditions. The heat-resistance value as given in Table I represents the temperature difference (in degrees Centigrade) between the plate surface and the air on the upper side of the fabric which would be required (under the experimental conditions) to make heat flow through 1,000 sq.cm. of the fabric at the rate of one calorie per second. A warm fabric will be characterized then by a high temperature difference. The Grenfell, the sail in the gray, the drill, and the unclassified cotton have apparently the same order of heat retention. Since the brown and olive-drab sails were changed in thickness during the dyeing process, they both gave values somewhat lower. For the fabrics not so warm as those of the Grenfell, it was not considered necessary in the present comparison to determine exact numerical results, and any minus sign in the table indicates that the apparent heat resistance is lower than the given value. Interesting results were obtained for the light-weight Kasha cloth which has a high air permeability and a low heat retention when measured alone. However, when sail cloth was placed over the Kasha, practically as high values were obtained as when cotton suede was measured with the sail cloth in the same way. Blanket material placed under the sail cloth was found to be an especially warm combination. Any of the low-permeability cotton fabrics of the same heat rating as the sail and Grenfell group could have been used as the upper covering with approximately the same result.

In conclusion it is perhaps fitting to call attention here to an additional possibility for the use of a close, cotton fabric like the unclassified cloth, which is apparently very adaptable for play-suits. Under certain conditions, it can doubtless be used to advantage as a protection in tropical heat. A covering of such material would need to be worn loosely and have enough openings to allow sufficient ventilation through the bellows action of the fabric. The high reflection of radiant heat by smooth, closely woven fabrics in general is confirmed by the recent work of James Gregory.[5] Naturally the finishing of certain materials was found to have considerable effect upon their usefulness as reflectors.

References

1. GRENFELL, W. T.—1928. "Grenfell Cloth for Arctic and Tropic Wear." *Among the Deep-Sea Fishers*, 26 (1): 34-35.

2. Consultant.—1929. "Shower-Proofing." *The Textile Manufacturer*, 55 (657): 318-319.

3. SALE, P. D., and HENDRICK, A. F.—1924. "Measurement of Heat Insulation and Related Properties of Blankets." *U. S. Dept. Com., Bur. Standards, Technol. Papers* 18, (266); 529-546, illus.

4. HILL, L., and CAMPBELL, A.—1925. *Health and Environment*, 208 pp., illus. New York.

5. GREGORY, J.—1930. "The Absorption, Transmission and Reflection of Radiant Heat by Fabrics." *Jour. Textile Inst.*, 21 (2): T57-65, illus.

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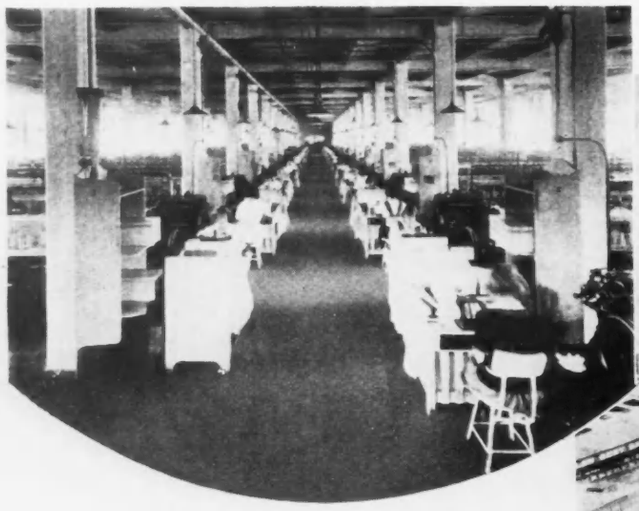
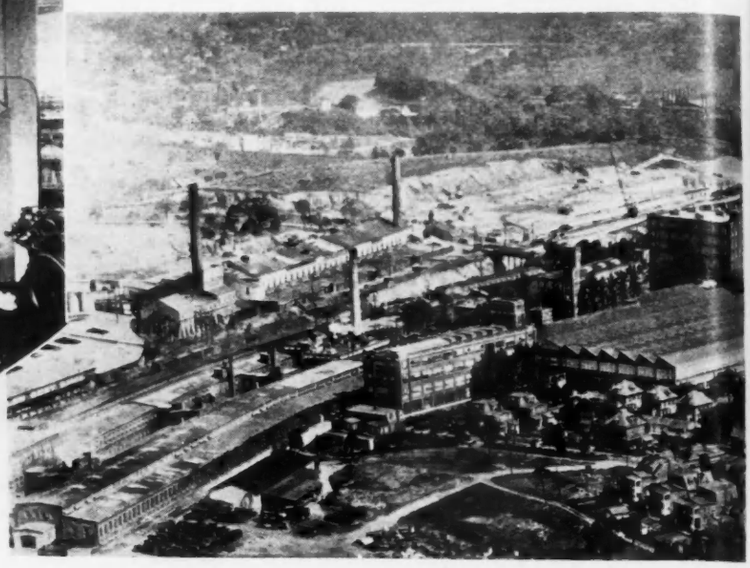


A view of a floor in Berkshire Knitting Mills, Reading, Pa.

General view of plants



Effective Trade School at Wyomissing

ONE of the most significant steps in cooperative education in the United States is being undertaken in the textile field by the Wyomissing Trade School, affiliated with the Textile Machine Works, Reading, Pa. The school, located near Reading, was established by officials of this concern, Ferdinand Thun and Henry Janssen. It is one of the largest cooperative educational units in the country, having more than 100 day and 50 night students, the former taking a three-year course, the fourth year being devoted exclusively to shop work. Expenses of the school are paid by the Textile Machine Works, and, in addition to this, students are paid as apprentices while they attend, making Wyomissing different from other schools of its type.

Students divide their time between work and school, spending the first six months of the day course in the Textile Machine Works shops. After this period they alternate between shop and the school, spending two weeks at a time in each. This schedule continues for two and a half years; the last year of the course is spent entirely in practical work in shops of the company.

Beside practical shop work, courses in English, civics, mathematics, chemistry, economics, physics, mechanical drawing, as well as a complete schedule of courses in textiles themselves, are available to students. This movement of combining theoretical and practical work in education is not new in principle, but is now receiving more attention than formerly. This example in the textile field is one of the most conspicuous, especially so because it is conducted by a private concern.

The equipment of the school is most complete, including modern chemical and physical laboratories. The school has a staff of nine instructors, functioning under the direction of R. F. Carey, head of the institution.

An Impressive Trio

Wyomissing Trade School is evidence that an unusual industrial group is to be found in the three large organizations which comprise the Wyomissing Industries. Located in the Wyomissing area of Reading are to be found the Textile Machine Works, largest manufacturers of full-fashioned knitting machines, Berkshire Knitting Mills, largest manufacturers of full-fashioned hosiery in the United States and the Narrow Fabrics Co., manufacturer of narrow fabrics of all types. Buildings occupied by the three firms cover more than 36 acres, and in the various structures, of which two are the largest of their type, over 9,000 have been employed.

Textile Machine Works was started in 1892, a partnership being formed, called Thun & Janssen, to build and repair textile machinery. In their then first, small two-story building the first American-built full-fashioned machinery was manufactured. In 1900 the name was changed to the present title and the business was in-

Erecting floor from east end of building, Textile Machine Works, at Reading

Wyomissing Industries, Inc.

A view of a floor in Narrow Fabrics Co., Reading, Pa.

for Operatives Feature Industries, Inc.

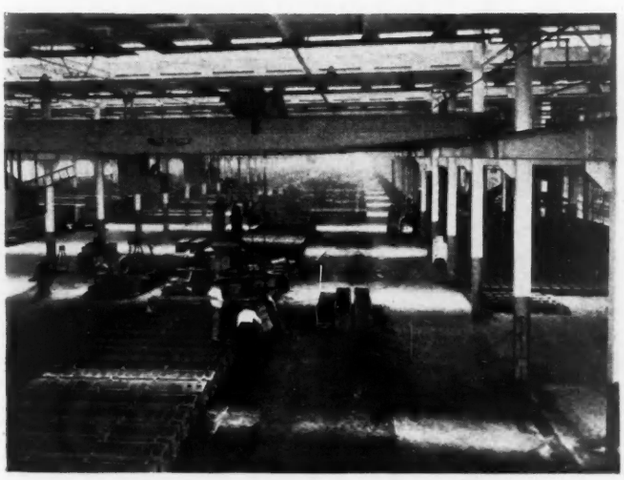
corporated. The president, Henry Janssen, is in charge of mechanical development, while Mr. Thun devotes his attention to marketing problems. The company has reached a maximum production of 150 full-fashioned knitting machines a month.

All details of production are carried on in this plant from pig iron to completed knitting machine. The foundry, containing 300,000 sq.ft., is the largest under one roof in the country. Hand labor is minimized by the use of modern devices. Working conditions for employes set a high standard, and the company operates a cafeteria seating 1,200, a recreation building, a hospital and a laundry. The plant's water softening and purifying system is not only adequate for its own use but supplies water to more than half the borough of Wyomissing.

Second unit of the Wyomissing Industries is the Berkshire Knitting Mills. Here nearly 10% of the full-fashioned hosiery produced in the United States is manufactured. More than 4,800 employes are required to produce this volume. The equipment consists of about 1,000 full-fashioned machines and from 39- to 48-gauge goods are made.

This large hosiery plant was started in 1905 with a small number of machines. In recent years the necessary expansion has been taken care of by the company's own construction department. A new addition to the Berkshire, now nearing completion, has been designed and erected by the company's staff. It will be used to house a new dyeing and finishing department, the plans calling for the dye-house to be located on the top, or fifth, floor, an interesting departure from the usual textile mill construction. Expansion of the looping and seaming departments will be made when the new addition is completed, and an enlarged laboratory installed.

The Narrow Fabric Co. is located in a separate building, in which are housed more than 7,000 braiding machines. To operate them more than 700 people are normally employed, turning out narrow fabrics of all kinds, laces, woven labels, elastics of all kinds, as well as bias bindings.



General view of foundry, Textile Machine Works, one of largest in the United States

Identified with F. F. Progress

Wyomissing Industries have meant much to the section of Pennsylvania in which they are located, entirely aside from the employment which they give to as many as 9,000 persons. Messrs. Thun and Janssen, officials of the organization, have promoted civic and charitable betterments in their neighborhood. The company and its leaders have been closely identified with the progress of the full-fashioned knitting machine and the full-fashioned hosiery industry in the United States. Their work in employer-employe relations has been notable. Development of the trade school during the last few years to its present scope is another noteworthy contribution by Wyomissing to general industrial progress.

OVERSEERS' ROUND-TABLE

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Choosing an Assistant

Editor, Overseers' Round-Table:

PICKING AN assistant is not a difficult task when the overseer has the proper perspective in viewing his department. Every executive has the problem of delegating responsibility and the good executive develops a high degree of accuracy in picking the man for the responsibility. Overseers should strive to develop this faculty.

A real executive can name his next in command immediately, not because he makes a snap judgment, but because he continuously views his organization as a series of gears and knows how each gear functions.

ANTHONY J. WATTS.

Problem of Who Should Hire the Help

Editor, Overseers' Round-Table:

AS THIS writer sees it, an overseer's mission is not so much that of trying out employes hired by an employment specialist, as it is to man his machines with employes who are qualified to run them efficiently. The overseer with experience should be able to discern qualifications in applicants which would likely escape the employment man as he cannot possibly be so much of a specialist in all the lines of work as the overseer can be in his line.

If a choice should have to be made the writer would have to cast his ballot in favor of the overseer, but it would seem to him better to combine the two plans and thus make available to the plant the abilities peculiar to each. The employment man, by interviewing all applicants, will weed out those whose lack of qualifications makes it a waste of the overseer's time for him to interview, and thorough understanding and cooperation between the employment man and the overseer will limit interviews only to those applicants who indicate possibilities. To what better purpose could a part of the overseer's time be put than that of seeing that his operating personnel does not include those who cannot deliver his plant's money's worth?

H. H. ILER.

Editor, Overseers' Round-Table:

I BELIEVE that the overseer should hire all his own help and that the superintendent should hire all the overseers.

What does an employment manager know about the qualifications of textile help unless he is an old superintendent and has had wide experience in the different departments? There are mills that lose good experienced applicants because someone not qualified interviews them. Seven out of ten who are hired by an unqualified judge are square pegs in round holes, and the overseer is the goat as far as production is concerned.

I have worked under three systems and have found that the following worked out the best: After the overseers made their rounds in the morning they all met in the mill office;

New Machinery Brings

"AS YOU know," Superintendent Chase settled comfortably in his chair, "we, in common with other progressive mills, are constantly on the lookout for new machinery which will enable us to produce more efficiently. Increased efficiency sometimes brings up questions of the effects on labor and that is my subject for discussion today. In stating your remarks I want you to remember that we always like to approach these problems from the standpoint of fundamentals before taking up the application to this individual mill.

"Let us, then, suppose that an average mill in an average textile town is to install a block of new machinery which has automatic features and is more complicated than the old type. Should the mill hire new workers who are experienced on the new machine or try and train their old help?"

"I guess everyone knows me well enough not to accuse me of being too hard-boiled," Bill cleared his throat, "but from a business standpoint I think it best to hire new experienced workers for the new machines. I've been around enough to know that there is often a certain amount of opposition to new machinery on the part of the workers. They often see some of their friends let out because that new machinery does not need as many attendants and it is difficult for them to see the thing in a broad light. Taking this factor into consideration it would probably take the overseer months to train the old help to such a state that the full advantages of the new machinery would be realized. In normal times if you let the old help go they find employment elsewhere and are more contented than they would be in the turmoil of learning a new job."

"I really do not think that Bill's plan is fair to the old employes," Pete argued, "because the operatives of new machinery are usually in a position to secure part of the gain in production in the form of higher earnings. The loyal employes

Up New Problems

should be given this chance ahead of any outsiders. I think that Bill remembers too much the old days and not enough the modern attitude of the worker when he speaks about the prejudice against automatic machinery. A lot of that old feeling has gone by the board.

"Furthermore, I do not belive that the problem of training the new help is anywhere nearly as complicated as Bill outlines. After all, the new machinery is generally some modification of the old and it is merely the new features which have to be studied. The machinery manufacturers are always ready to help in any way they can and I think the mill should value their old employes sufficiently to expend some time and trouble in their behalf."

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Do *you* think that experienced help should be brought in to operate a new type of machinery or the old workers trained to take over the work?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable

each overseer interviewed such help as he required. In addition it gave the overseers an opportunity to greet each other once a day and consult on different problems.

C. E. SPRAGUE.

Editor, Overseers' Round-Table:

THE OVERSEER should hire his own help, carefully selecting the man or woman best fitted for each position. He should not favor relatives and friends and should avoid mingling socially with his help.

In case of business depression, he can rearrange his force, dismissing the newer hands and sharing the work as equally as possible among the more experienced workers.

When the busy season arrives, he has the nucleus to reconstruct his organization, as he has won the good-will and respect of these employes.

By conscientious, unprejudiced hiring and handling of his employes, he can save his firm many dollars and also increase his own earning capacity, which he could not and, furthermore, would not feel obliged to do if someone else supplied him with help. CHAS. BUCHANAN.

Warm Weather Brings Up the Topic of Baseball

Editor, Overseers' Round-Table:

BY ALL means have a baseball team, but remember that there are two kinds of baseball, hard ball and indoor. To avoid the usual complications such as hired players, uniforms, large expenses, diamond upkeep, etc., play indoor baseball outdoors.

It takes a *real* hard ball team to hold the attention of the employes for they must be winners—and winners cost money. It is hard to get a group of employes to root for nine men all summer, so why not do it in another way?

Organize several indoor teams in the plant and let them play against each other. Everyone can play indoor ball for it requires no skill and gives fun and exercise to all. It is far more fun to play on an indoor team from your own department than to sit on the sidelines and watch someone play regulation ball.

If you want your employes to have some real sport and keep up department interest, organize an indoor league in your mill. The expense is small and the sport is one in which all can participate. W. G. LAIRD.

Editor, Overseers' Round-Table:

EVERY MILL should have a ball team where possible and every superintendent and overseer should take an interest in the sports of the community, for this makes the employes feel that they are thought of in other ways than just a machine to do so much work.

An inefficient worker should never be employed just because he can play ball, for playing ball or any other sport will not run a mill. Neither do I believe in letting ball players off two or three times a week for practice as I have sometimes seen done.

Play ball—but after the work has been done. C. W. C.

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Summary of Discussion on Training New Employes

Contributions received on the subject of the best methods of training new and inexperienced help reveal the fact that considerable study is being given to the problem. Some type of modification of the training school idea, suitable to the smaller mill, received the most support. The methods advocated boiled down to a careful selection of the teacher and an endeavor to give the new worker an insight into the preceding and succeeding departments. The old idea of just letting the new employe work with any of the older workers was conceded to be fraught with danger and the real training school suitable only to the large mill.

NEWS about MEN

GARDINER H. MILLER, who retired as president of the New York Cotton Exchange last month, sailed for Europe on the S.S. "Britannic" July 12 for a month's stay abroad, in the course of which he will visit Liverpool, London, Paris, and Havre.

ARTHUR SHUTTLEWORTH, president of the Mohawk Carpet Mills, has announced the appointment of Z. L. POTTER as director of distribution, effective July 1. Mr. Potter has been connected with the Mohawk Carpet Mills for a period of five and a half years as president of the advertising agency handling the Mohawk account, and his appointment as director of distribution is a recognition of his broad understanding of the problems of Mohawk distribution. Mr. Potter will not replace any of the department heads charged with sales activities or development and styling of the line. GEORGE LAMBIE will continue as general sales manager; JAMES HUSBAND as merchandise manager; EVERETT H. TOUSSAINT as advertising and sales promotion manager; MR. HOOPER as market analyst, and MR. WAY as stylist. Mr. Potter's function will be to tie all the factors in Mohawk's selling into a single effective unit in the service of the trade.

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EUGENE N. SITTON, president of the Pendleton Mfg. Co., at LaFrance, S. C., formerly Autun, S. C., has resigned his position and, according to a statement he issued, will hereafter devote his entire time to his varied business interests in upper Carolina. For 17 years Mr. Sitton has been at the head of the Pendleton textile plant, one of the oldest in South Carolina. He and his family owned the stock, and sold it to the LaFrance Corp. of Philadelphia two years ago. Officials of the Pendleton Mfg. Co. state that no successor to Mr. Sitton has been named.

MATTHEW P. WHITTALL, president and treasurer of the M. J. Whittall Associates, Ltd., Worcester, Mass., and MRS. WHITTALL, are occupying their summer home, "Shore House," East Marion, Mass., for the season.

W. E. HOLT, GEORGE W. MOUNTCASTLE and C. A. HUNT, all prominent in the textile industry in Lexington, N. C., ROBERT LASSITER, of Charlotte, president of the Mooresville (N. C.) Cotton Mills, and HILL HUNTER, purchasing agent for the Proximity Mfg. Co., Greensboro, N. C., were elected directors for one year of the North Carolina Railroad Co., State owned, which runs from Goldsboro to Charlotte and is leased and operated by the Southern Railway Co.

LEO O'MELIA, president of O'Melia Silks, Inc., Fonda, N. Y., is passing a several weeks' vacation at Caroga Lake in the Adirondacks.

R. J. CLARK, head of the silk glove firm of Clark Bros., Glens Falls, N. Y., has been elected to the various committees of the Rotary Club in that city.

LAMONT DUPONT, president of E. I. du Pont de Nemours & Co., has announced his engagement to MRS. CAROLINE HYNSON STOLLENWERCK, of Scarsdale, N. Y., a former resident of Wilmington, Del. Mrs. Stollenwerck is the widow of E. Carroll Stollenwerck, of Baltimore. Mr. duPont's wife died about two years ago. No date for the wedding has been set.

Jerome Lewine, re-elected president of the National Raw Silk Exchange

JEROME LEWINE was unanimously re-elected president of the National Raw Silk Exchange July 15. At the same meeting DOUGLAS WALKER was elected first vice-president; CHARLES MULLER, second vice-president, and AUGUST SCHIERENBERG, treasurer. Mr. Lewine is a partner of the New York Stock Exchange firm of H. Hentz & Co. LOUIS KAHN, FLOYD Y. KEELER, ALLAN MACFARLAN and ALBERT TILT were elected to the board of governors for three-year terms. NELSON DOUGHERTY, ARTHUR B. ELLIMAN and HANS RIGGENBACH were elected inspectors of election. Every nominee on the regular ticket received the full vote cast.

J. L. BRIDGER, who has been vice-president and general manager of the Bladenboro (N. C.) Cotton Mills, Inc., since their organization in 1912, at a special meeting of the stockholders recently was elected president to succeed the late R. L. BRIDGER, who died several weeks ago. C. O. BRIDGER, secretary and treasurer, was elected vice-president in addition to his other duties.

GEORGE DUFFY, head of the Duffy Silk Co., Fort Plain, N. Y., is among the newly elected directors of the Mohawk Valley Towns' Association for the ensuing year.

DR. E. V. BROOKS, president of the North Carolina State College, Raleigh, N. C., will deliver an address at Santiago, Chile, July 19, on "Relation of Education to Agricultural Progress in America," commemorating the 100th anniversary of opening of the Chilean nitrate of soda mines.

H. A. KNIGHT, who was recently elected president of the Bassett (Va.) Knitting Mill, Inc., manufacturer of men's knitted cotton underwear, is also acting as superintendent, succeeding J. W. STEPHENS, who has resigned.

HENRY CLAY GRATON, a founder and former treasurer of the Graton & Knight Co., Worcester, Mass., quietly observed his 100th birthday on July 10. The routine of the venerable man, who is in excellent health considering his very great age, is the same today as it has been for years. Automobiling and the movies are his principal recreations.

LUTHER H. HODGES, an executive of the Carolina Cotton & Woolen Mills Co., of Spray, N. C., has been appointed chairman on the international committee on community service for Rotary International by ALMA E. ROTH, the newly elected president of the Rotary International.

PAUL HYDE BONNER, vice-president and general manager of Stehli Silks Corp., sailed for France July 11 on the "Ile de France" to study style indications of the forthcoming seasons.

JAMES R. WHITE has been elected vice-president and director of sales of Jenkins Bros., 80 White St., New York.

J. B. REEVES has been chosen second vice-president of the Cleveland Cloth Mills, Shelby, N. C.

F. OSBORNE PFINGST, vice-president and manager of the Greensboro (N. C.) Full-Fashioned Hosiery Mills, Inc., was recently elected a director of the North Carolina Industrial Bank, of that city.

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IRBY GOREE, formerly a member of the office staff of the Chester, S. C., unit of the Aragon-Baldwin Cotton Mills, Inc., and several months ago transferred to the Whitmire plant of company, as superintendent, recently resigned to accept a position with public accountants, Cooley & Marvin, Boston, Mass. He will be connected with the Greenville, S. C., office of the accounting firm, traveling out of that city.

W. L. PHILLIPS, who for the last 29 years has been actively engaged in the textile industry, has retired from that field to become associated with Southern Automatic Sprinkler Co., Inc., Birmingham, Ala.

PETER GRANT, one of the officials of Hiram Leach & Sons, textile manufacturers of Bradford, Eng., is now visiting Canada.

CHARLES A. ROOT, treasurer of the Uxbridge (Mass.) Worsted Co., Inc., was host to a party of friends on his yacht "Toorac" off the Rhode Island coast on July 9 during which they witnessed the American yacht race trials. Included in the party were STANLEY H. WHEELOCK, president and treasurer of the Stanley Woolen Co., and EDWARD J. BRADY, president of the Waucantuck Mills, both of Uxbridge.

N. E. D. SHEPPARD has resigned from the secretaryship of the Canadian Woolen & Knit Goods Manufacturers Association and the Silk Association of Canada, and has been succeeded by MAJOR DOUGLAS HALLAM, the former secretary.

HERBERT E. PRITCHARD is the newly elected secretary and treasurer of the Springfield (Tenn.) Woolen Mills.

ALBERT L. SANDERS, secretary and treasurer of the Cherry Valley (Mass.) Woolen Co., and MRS. SANDERS, are on a two weeks' motor trip through Canada.

D. P. STOWE, secretary and treasurer of the Perfection Spinning Co., Belmont, N. C., was recently elected president of the Belmont Rotary club.

T. OGOSHI, manager of the Dallas, Texas, office of the Southern Cotton Co., large exporters of American cotton to Japan and the Far East, has been transferred to the New York office managership, succeeding Y. SHINOHARA, who has been made manager of the Dallas office.

W. H. COOPER, formerly general manager of S. Sanford & Sons, Amsterdam, N. Y., is enjoying an extended vacation at points of interest in Maine.

THOMAS STINSON, office manager of the M. J. Whittall Associates, Ltd., Worcester, Mass., is on a fishing trip in Nova Scotia.

STANLEY MORTON has been appointed assistant to the general sales manager of Atwood Machine Co. He will be located at the general sales office at 267 Fifth Avenue, New York, and will be assistant to P. N. THORPE, general sales manager. Mr. Morton has been with the Atwood Machine Co. for 15 years, and more recently has been acting as service engineer.

E. G. MONTGOMERY has been appointed sales manager of the Dominion Silk Dyeing & Finishing Co., of Drummondville (Que.) Can.

C. A. REYNOLDS, general manager of Belding-Corticelli, Ltd., Montreal, Que., left recently for a vacation at Cape Cod. He will not return to his duties until in the early autumn.

JOHN H. O'NEILL, of Tennessee, has joined the sales force of the Draper Corp., Hopedale, Mass., and will be assigned to southern territory after a few weeks' training at the main plant.

ROBERT A. C. SCOTT has taken the position as styler for the American Woolen Co. at the New York office.

E. P. COFIELD, for several years general superintendent of the Gossett chain of mills in South Carolina with headquarters at Anderson, will be transferred to Charlotte, N. C., Sept. 1, becoming the styling and merchandising representative of both the Gossett and the Chadwick-Hoskins chain of mills, according to announcement of officials of these plants. Mr. Cofield is succeeded at Anderson by W. C. BOBO, formerly general manager of the Judson Mills, who has been with the Gossett mills for the last several months.

GEORGE P. GILMORE, plant superintendent of American Printing Co., Fall River, Mass., since 1912, has resigned. He was previously connected with the American Thread Co. for 12 years.

R. S. PORCH recently resigned as superintendent of the Roberta Mills, of the Russell Mfg. Co., Inc., group, at Alexander City, Ala., and I. T. CHAPELL, superintendent of the Russell Mills, was transferred to the superintendency of the Roberta Mills, to succeed Mr. Porch.

EUGENE NEW, formerly connected with Schwarzenbach-Huber Co., of Union City, N. J., is now superintendent of Southern Specialty Co., Charlotte, N. C., producers of silk, and rayon yarns and warps.

ARTHUR M. RAUSCH has taken the position as superintendent of the Glenside Woolen Mills, Skaneateles Falls, N. Y., succeeding FRANK J. CARR.

H. B. TAYLOR, general superintendent of the Chadwick-Hoskins Co., Charlotte, N. C., has tendered his resignation, effective Aug. 1.

ADRIAN THOMAS recently resigned the superintendency of the Russcony Mills, one of the Russell group, at Alexander City, Ala.

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GEO. W. TURNIPSEED, who has been superintendent of the Alabama Mills Co.'s Dadeville, Ala., plant, has also been appointed assistant general superintendent of the Clanton, Greenville and Wetumpka plants of the company.

H. A. THORNTON recently resigned as superintendent of the Russell Mfg. Co., Inc., Alexander City, Ala.

BURTON YATES, formerly superintendent of the M. & Y. Hosiery Co., Fultonville, N. Y., has returned to that village after severing connections with a textile firm at Springfield.

LYLE ALWOOD is now second hand in weaving at the Arnco Mill, Newnan, Ga.

W. L. BAGWELL is now overseer of carding at the Martel Mills, Inc., Valley Falls Mill, Spartanburg, S. C.

W. H. FERGUSON, formerly of Concord, N. C., recently assumed his new duties as head of the cloth room of the Manetta Mills, Monroe, N. C.

JAMES EGAN, foreman of the picking department of Cheney Bros., So. Manchester, Conn., has been retired after 50 years of service.

HARRY FEATHERSTONE, overseer of finishing at the Glenside Woolen Mills, Skaneateles Falls, N. Y., has severed his connections with that company.

W. L. LINDSAY is now second hand in weaving at the Clinchfield Mfg. Co., Marion, N. C.

MR. & MRS. HERBERT J. HOPE, of Sanford, Me., recently observed their golden wedding anniversary. Mr. Hope has been supervisor of plush weaving at the Sanford Mills for 38 years.

H. L. REED has been promoted to a position in the chemical laboratory of the American Enka Corp., Enka, N. C.

JIM WRIGHT is now head of the night spinning at the Arcade Cotton Mills, Rock Hill, S. C.

HANS C. PFALZGRAF, who has been landscape gardener at the village and plant of the American Enka Corp., at Enka, N. C., was promoted recently to yardmaster at the plant, and will have charge of outside railway switching and freightage.

Obituary

Edmund Niles Huyck

Edmund Niles Huyck, president of F. C. Huyck & Sons, Rensselaer, N. Y., the Kenwood Mills, Ltd., Arnprior, Ont.; a director of the National Commercial Bank of Albany, N. Y., and a trustee of the Albany County Savings Bank, died at his summer home in Rensselaerville, N. Y., July 15. He was 64 years old having been born in Rensselaerville in 1866. He was educated at Albany Academy and Williams College and in 1888 entered his father's business of manufacturing paper-makers' felts. In 1894 the name of F. C. Huyck & Sons was adopted which has been continued ever since. E. N. Huyck expanded the business to include bed blankets, motor robes, sleeping bags, tweeds, etc. The mill at Rensselaer operates 21 sets of woolen cards, 6,550 woolen spindles and 120 looms. It has maintained a reputation for successful merchandising for some years.

Mr. Huyck's interest in education and medicine found expression in his activity in the affairs of Union University, of which the Albany Medical College is a part. He was president of the university's board of governors and was especially interested in medical practice in the rural sections of the state. He was also president of the board of governors of the Albany Hospital and in 1918 was president of the Albany Chamber of Commerce. He was a director of the Albany Home Building Co. and of the National Commercial Bank & Trust Co. During the World War he was in charge of the department of woven felts of the War Industries Board, and in 1914 he served on the Housing Commission for second class cities and as advisory commissioner of the State Fund for Compensation Insurance.

He was a member of the American Academy of Political and Social Science, the National Association for Labor Legislation, and of Delta Phi fraternity. His clubs included the University, the Fort Orange, the Albany Country of Albany; the Century, the St. Anthony and the Williams College Clubs of New York. Funeral services were held at the Presbyterian Church in Rensselaerville, N. Y. on Thursday.

Samuel E. Wild

Samuel Edwin Wild, who was overseer of weaving for the Daniels Mfg. Co., East Brookfield, Mass., when it was located in Worcester, Mass., died at his home in Worcester, recently, aged 78 years. He was a native of Oldham, England, and had lived in this country for 70 years and in Worcester for 55 years. He leaves a widow, one daughter and a son.

Henry Temple Pope

Henry Temple Pope, manager of the Chickamauga Knitting Mills, Nashville, Tenn., died at his home in that city at the age of 63. His widow, two sons and two daughters survive.

E. C. Carpenter

E. C. Carpenter, aged 52, former secretary and treasurer of the Bearskin Mills, died at Monroe, N. C., June 28. At the time of his death he was a public accountant. He is survived by his widow and two sons.

NEWS about MILLS

Cotton

Dwight Mfg. Co., Alabama City, Ala., is said to be arranging for the complete electrification of its local mill, in connection with an expansion program.

Canton (Ga.) Cotton Mills have recently installed two more sets of Breton Minerol process equipment. This now completely equips their mills.

***Lancaster Mills,** Clinton, Mass., have completed the removal of machinery from the plant, including 2,684 looms which were purchased by the Amoskeag Mfg. Co., Manchester, N. H. Other sections of the vast quantity of machinery have been crated and shipped to southern mills, and the tools and other equipment have been disposed of at the plant. The Textile Liquidation Co., New York, is in charge of the disposal of the remainder of the machinery and equipment, which will be sold at public auction on July 29 and 30.

Union Cotton Mfg. Co., Fall River, Mass., has called a special meeting of stockholders, July 23, to arrange plans for the dissolution of the company. The capitalization is $1,200,000, with property consisting of three mills.

Dwight Mfg. Co., Somersworth, N. H., resumed operations July 14 after a shutdown of two weeks. Minor repairs were made throughout the plant while operatives enjoyed a vacation.

***Clark Thread Co.,** East Newark, N. J., will purchase a large quantity of its requirements of unfinished yarns in the open market until further notice, following the recent shutdown of its local Mill No. 3, heretofore given to such production. The departments used for processing cotton, prior to spinning and twisting, will continue as in the past, as will also the dyeing works and processing mill at Bloomfield, N. J.

New Hartford (N. Y.) Cotton Mfg. Corp., suffered considerable damage last week when fire of unknown origin caused a total loss of a warehouse adjoining the main mill.

Henrietta Mills, Caroleen, N. C., since resuming operations following the shutdown for the week of July 4, have resumed full-time operations. Officials of the mill state that increased demand for its product justifies full-time operations.

Manville Jenckes Co. (Loray Division) Gastonia, N. C., following a two weeks' suspension, resumed operations July 14 on a three day per week basis.

Butterworth Plush Co., Philadelphia, Pa. Receiver in equity has been appointed for this concern, manufacturer of cotton plushes, resulting from action brought by Dunn-Wetzell Co., dealer in cotton yarns, for $6,400. Janet G. Blum, secretary of the company was also interested in the suit. Lack of liquid assets was the reason for receivership although a statement presented showed excess of assets over liabilities of $63,000.

*Indicates previous mention of project.

***Globe Mfg. Co.'s** (Gaffney, S. C.), plant and property were sold at auction in that city, July 10, to Dr. W. K. Gunter, manager of the Derry Damask Mills, of Gaffney, for $20,000, subject to confirmation of the common creditors. There was only one other bidder, I. W. Gray of Woodruff, S. C. When thrown into bankruptcy the Globe company was capitalized at $50,000 common stock, $100,000 preferred stock, while the indebtedness, according to claims filed by creditors, totaled $520,000. The physical property consisted of one two-story mill (brick) building, 7 warehouses, 28 dwelling houses, a store-building, and 34 acres of land located within the corporate limits of Gaffney.

Springstein Mills, Chester, S. C., have completed the installation of 360 automatic looms which will replace the 314 gingham looms, of which 148 have been retained. The mills are turning out 39 in., 68 x 72, 4.75 print cloth.

Athens, Tenn. The shutdown of power plant which was closed for several days for repairs following damage suffered by an electrical storm, caused the cotton mills in this section to be closed down for several days.

Wool

Hockanum Mills Co., Rockville, Conn., resumed operations in all departments July 14 following a shutdown of two weeks.

Talbot Mills, North Billerica, Mass., closed bids on July 14 for an addition, to be equipped as a finishing mill. It is expected to award general contract at an early date. Charles T. Main, Inc., 201 Devonshire St., Boston, Mass., is architect and engineer.

Bigwood Woolen Co., Spencer, Mass. The mortgagee's sale of this property consisting of the mill buildings and three tenement houses, was adjourned on July 8 until August 4 at 2:30 p.m. The mortgage is held by the Mechanics National Bank, Worcester, Mass., which foreclosed.

Acme Worsted Mills, Jamestown, N. Y., have abandoned operations, and a goodly portion of the machinery and equipment has been removed to the plant of the **Empire Worsted Mills, Inc.** The Acme plant has been acquired by the Art Metal Construction Co., and will be remodeled and equipped for the production of metal furniture.

Leaksville Woolen Mills (No. 2), Homestead, N. C., announce their continued full-time operation, with the exception of a two weeks' vacation, which is given each year.

Pendleton (Ore.) Woolen Mills, now located in their new headquarters, will handle distribution of the three mills, located at Pendleton, Ore., Washougal, Wash., and Eureka, Cal. Clarence M. Bishop, vice-president, is manager.

Huntingdon (Que.), Can. Hiram Leach & Sons, serge manufacturers of Bradford, England, have completed all arrangements for the establishment of a branch mill here. Fred Higginsbottom, 1449 St. Alexander St., Montreal, a director of the concern, has secured a four-story building and will arrange for the purchase and installation of the machinery so that the plant will be in operation sometime in September.

Knit

Alabama Hosiery Mills, Decatur, Ala., has authorized an expansion program to cost over $200,000, including installation of additional equipment for enlarged output. The work is scheduled for completion within 12 months.

J. Broadbent & Son, Inc., Unionville, Conn., cotton and merino yarns and hosiery, will close their plant indefinitely July 19.

Fellman Knitwear Corp., Worcester, Mass., has been formed with a capital of 30 shares of stock, no par value, to manufacture and deal in knit goods. The company will be represented by Samuel Kravitz, 6 Chapin St., Worcester, who has been elected treasurer. Aaron Kravitz is president.

Ellis Silk Hosiery Co., Charlotte, N. C., is expending $120,000 on new machinery, doubling its capacity, and is also increasing number of employes by 100%. Twelve new full-fashioned machines will be installed, each costing around $10,000. It will require about three months to install the new machinery, as announced by A. J. Cobert, superintendent.

May Hosiery Mills, Inc., Burlington, N. C., plant is equipped with an automatic cooling and humidifying system. Additional machine installations to the full-fashioned department, that will cover a period of five or six months, is now underway.

Oswego (N. Y.) Underwear Corp. was this week incorporated under State laws with F. L. Carlisle, H. E. Machold and R. K. Ferguson as the principal directors.

Kraemer Hosiery Co., Philadelphia, Pa. On July 5, fire damaged a portion of the mill of this company, with loss reported at close to $10,000. The damage will be repaired.

Philadelphia, Pa., David Berger, 129 South 9th St., manufacturer of hosiery, has purchased property at Lycoming & H Sts., 133 x 350 ft., for a reported consideration of $27,000, and will use it as site for a new hosiery mill, for which plans will be prepared at once. Present plant will be removed to the new location.

Bear Brand Hosiery Co., Beaver Dam, Wis., which also operates a retail store there, has moved that department to its new quarters in the recently completed four-story addition.

Hoslers, Ltd., Woodstock (Ont.) Can. A huge direction sign for guiding aviators has been placed on the roof of the plant. C. S. McMaster, superintendent, is an aviation enthusiast.

Fabrica Nacional Inc., Havana, Cuba, manufacturer of hosiery, has removed its mill to the town of General Machado, where a new building has been acquired and modern machinery installed.

Silk

Special Rayon Throwing Co., Inc., Paterson, N. J., recently formed with a capital of $125,000, to operate a local mill, will be represented by Samuel L. Biber, Louis Friedman and Annie Friedman. The principal office is located at 36 Railroad Ave., Paterson. The corporation was formed principally for the purpose of manufacturing, treating, throwing and selling silk and yarns.

Progressive Silk Mfg. Co., Amsterdam, N. Y., through B. H. Lichtman has sold property in that city to Joseph Pelazar, according to a deed filed with the county.

A. H. Rogers Silk Co., Gloversville, N. Y., is increasing operations by taking on additional workers.

National Lace & Embroidery Corp., New York, has filed notice of company dissolution under State laws.

Easton, Pa. At a meeting of about 1,000 employes of silk mills here, a wage reduction of approximately 10% was accepted by the weavers, warpers and loom fixers. Instead of closing down the plants, as was intended, the reduction enables manufacturers to keep the mills running and accept large contracts, which under former conditions they would not be in a position to accept.

Rose Mills, Inc., Philadelphia, Pa., have purchased the mill at Indiana Ave. and Rosehill St., on site 156x250 ft., for a stated consideration of $115,000, subject to a mortgage of $80,000, and are said to be planning to occupy it for a new mill. The unit is five-story and totals about 88,000 sq.ft. of floor space.

Taylor Silk Mills, Inc., Pawtucket, R. I., have curtailed production, following a strike of weavers as a result of announcing a wage reduction of 15%.

Fayetteville (Tenn.) Silk Mills Co. has applied for charter of incorporation, the incorporators being George Goodrich, H. J. Mandell, W. G. Cowan, L. W. Alexander, and B. E. Holman. There are 1,000 shares no par value stock.

E. W. Brupbacher, Ltd., Toronto, silk manufacturers, who are building a silk mill at Valleyfield (Que.), have awarded further contracts which will complete the plant. Foundations are in and the superstructure is proceeding. Plans call for two stories to contain about 80,000 ft. of storage space. The estimated cost is $225,000.

Rayon

B. D. E. Rayon Mfg. Co., Boston, Mass., recently chartered with a capital of $1,000,000 to operate a rayon plant in the vicinity, will be represented by Jerome A. Petitti, 18 Tremont St., Boston, an attorney, who has been elected treasurer. John J. Delehanty is president.

Tubize-Chatillon Artificial Silk Corp. of America, Hopewell, Va., has resumed operations after being closed down for the last ten days. The shutdown was due to the replacing of machinery in certain sections of the plant and the repairing of the machinery in others. A large number of the force was employed in this work, but the majority of employes of the company have been out of work since July 2.

*Indicates previous mention of project.

Finishing

Arnold Print Works, North Adams and Renfrew, Mass., as announced by Dr. Samuel M. Jones, president, will not shut down or curtail schedules, according to current rumor.

***Associated Dyeing & Printing Corp.,** Paterson, N. J. Following recent appointment of receivers for this company, it is said that plans for reorganization are under way. An announcement has been issued that all note-holders and other investors will be protected, and that plant operations will be continued as heretofore.

Floc-Art Print Works, Inc., Paterson, N. J., recently formed with a capital of $50,000, to operate a local mill, will be represented by Alfred W. Cooper, 786 Broad St., Newark, N. J., attorney. The principal incorporators are Clarence C. and M. L. Gleason, Paterson.

***Valkone Dye & Finishing Works, Inc.,** Philadelphia, Pa., located at Howard & Oxford Sts., have sold their plant and other assets to S. Sacks, who is acting for an undisclosed principal, for $90,000. This total is represented by cash payment by Mr. Sacks of $20,000 and $70,000 first mortgage on the plant. Purchaser has also agreed to assume a $16,000 yearly lease of the Valkone concern on building at Mascher & Turner Sts. The Sacks offer was approved by U. S. District Court.

Werthan-Morgan-Hamilton Bag Co., Nashville, Tenn., is having its spinning overhauled by the Southeastern Machine Co., of Atlanta, Ga.

Miscellaneous

K. S. Embroidery Corp., Jersey City, N. J., recently formed with a capital of $50,000, to operate a machine embroidery works, will be represented by Nathan Bodner, 30 Journal Square, Jersey City, an attorney. The incorporators include Archie E. Shilling and Ralph Freudenberg, both of Jersey City.

Miles Linen Co., Inc., Salem, Oregon, for the first time in its history, declared a dividend on its common stock of $200,000. The dividend is 4% and was payable July 1. Dividends on preferred stock of $50,000 have been paid regularly since the mill was established.

Eastern Lace & Braid Co., West Barrington, R. I., lately formed with a capital of $50,000, to operate a local mill, will be headed by Myron J. Lockwood, 89 Warrington St., Providence, R. I., one of the incorporators. Other incorporators include C. Earl Sisson and Thomas E. Tefft.

Textile Patents

AUTOMATICALLY replenishing looms, Outgoing thread control for. 1,768,502. Horace H. Burdett, Hopedale, Mass. Assigned to Draper Corp., Hopedale, Mass.

AXMINSTER looms, Tube frame for. 1,766,834. Arthur P. Paine, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

BLEACHING, Apparatus for. 1,766,716. Thomas McConnell, Easthampton, Mass. Assigned to the Hampton Co., Easthampton, Mass.

BOBBIN support. 1,766,809. William H. Bahan, Greenville, S. C.

BOX looms, Stop motion for. 1,766,907. Victor H. Jennings, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

CLOCKED floated-thread hosiery, Mechanism for forming. 1,766,772. Harry K. Bergman, Shillington, Pa. Assigned to Hemphill Co., Central Falls, R. I.

CLOTH shears, Cloth-rest construction for. 1,768,490. Charles G. Richardson, Springfield, Vt. Assigned to Parks & Woolson Machine Co., Springfield, Vt.

COTTON gin. 1,767,894. William J. Petty, and Eugene M. Hancock, Hollis, Okla.

CREELS, Thread controlling device for. 1,765,590. Frank B. Javery, Worcester, Mass. Assigned to Warp Compressing Machine Co., Worcester, Mass.

DEVICE for applying oil or other liquid to thread. 1,767,203. Clarence E. Coleman, Buffalo, N. Y. Assigned to Du Pont Rayon Co., N. Y.

DISPOSAL device for ejected weft carriers. 1,766,732. Richard G. Turner, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

DOUBLE draft arrangement for spinning flax, jute and similar, fiber. 1,766,864. Georg P. Wershinin, Moscow, U. S. S. R.

DOUBLE-shuttle looms, Weft-replenishing mechanism for. 1,766,729. Samuel Stewart, Milford L. Allen, and Simeon O. Roy, Lewiston, Me. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

DRYING apparatus and method. 1,766,595. Lucien Buck, North Adams, Mass. Assigned one-half to James Hunter Machine Co., North Adams, Mass.

DRYING machines, Automatic carrier-turning mechanism for. 1,766,984. John Wesley Dennis, Philadelphia, Pa. Assigned to the Philadelphia Drying Machinery Co., Philadelphia, Pa.

DYEING and wet-treating of fabric, Apparatus for. 1,765,912. Woldemar Fehrmann, Dresden-Strehlen, Germany.

ELECTRIC weft detectors, Bobbin for. 1,766,861 Walter H. Wakefield, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

FABRIC treating machine. 1,768,455. Walter W. Sibson, Philadelphia, Pa. Assigned to the Philadelphia Drying Machine Co., Philadelphia, Pa.

KNITTED fabric. 1,766,349. Otto Nuber, Reutlingen, Germany.

KNITTING machine for spot-dyeing apparatus. 1,767,762. Robert G. Jennings, Elmira, N. Y. Assigned to the R. G. Jennings Yarn Cleaning Machine Co., Inc., Elmira, N. Y.

KNITTING machine needle. 1,767,595. Vincent Lombardi, Brooklyn, N. Y.

LOOM. 1,765,708. William S. Wells, Los Angeles, Calif. Assigned to Wonder Weave Inc., Boston, Mass.

LOOM. 1,768,096. Francis E. Ashton, Chester, Pa. Assigned to Aberfoyle Mfg. Co., Chester, Pa.

LOOM. 1,768,510. John S. Coldwell, Fall River, Mass. Assigned to Leno Elastic Web Co. of Mass.

LOOM dobby. 1,766,835. Harry O. Pashoian, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM drop-box connection. 1,766,756. Carl J. Lindegren, Providence, R. I. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM for weaving tufted pile fabrics. 1,767,758. Thomas William Head, Bridgworth, England.

LOOM operating device. 1,767,906. Karl Werner, Nuremberg-Eibach, Germany. Assigned to Progress Gesellschaft fuer Textilmaschinen mit Beschraenkter Haftung, Nuremberg, Germany.

LOOM picker-rod spindle support. 1,766,733. Kenneth J. Unwin, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

LOOM picking spindles, Mounting for. 1,766,739. Carl P. Bergstrom, Millbury, Mass., and Carl J. Lindegren, Providence, R. I. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

Questions and Answers

We undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to TEXTILE WORLD. We do not undertake, however, routine analysis of yarn or fabric, or investigation involving unusual expense.

Inquiries should give the fullest information and data possible. In the case of damage to material, a sample should be sent. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as evidence of good faith. The identity of those seeking information on technical subjects will not be disclosed.

Letters expressing opinions or voicing criticism are cordially invited. These will be signed by the correspondent's name unless the letter itself contains a request that the name be withheld.—EDITOR.

Finishing Cotton-Rayon Crepe

Technical Editor:

We are enclosing herewith a sample of cotton-rayon crepe. Will you kindly give us directions for finishing this fabric? (7195)

Various methods are employed for finishing cotton-rayon crepes in different plants. We are outlining the methods which have proved to give the best results, but it is sometimes possible to secure fairly satisfactory work using short cuts.

The best crepe effect is secured by first treating the fabric in a rotary laundry or dyeing machine. The pieces are put in net bags and placed in the laundry machine, where they are treated for 20 to 30 min. with boiling water. A small amount of alkali, such as soda ash, may be added to the water if desired. The cloth is then removed from the laundry machine, taken out of bags, and transferred to a reel dyeing machine. It is preferable to give the goods a light scour for 1 to 1½ hours at 180° to 210° F. in a solution containing 5 lb. of chip soap, 5 lb. of turkey-red oil, and 1 lb. of soda ash, to each 100 gal. of water. The fabric is next washed for 15 min. with hot water, and then for 15 min. with cold water.

For light shades it is sometimes necessary to bleach the goods. As a rule treatment for 1 hour at 65° to 70° F. with sodium hypochlorite 1½° to 2° Tw. is sufficient. After bleaching, the goods are rinsed with cold water, given an antichlor for 15 min. with 1 lb. of sodium bisulfite to each 100 gal. of water, and again washed. Without being removed from the machine, they are then dyed, usually with direct colors. At the end of ½ hour a patch is taken, dryed, and matched for shade. Any addition of dyestuff that is necessary may be made directly to the liquor already in the machine; or if necessary, the goods may be boarded, fresh water run into the beck, and the additional dyestuff, previously dissolved, poured in. The fabric is then entered and dyed until the correct shade is obtained. The dye liquor is wasted and the fabric rinsed with cold water. The goods are then taken from the machine, extracted in a centrifugal hydro-extractor, and dryed on either a loop or (preferably) apron dryer. Finally they are brought to width on a light tenter frame, taking care not to stretch them any more than is necessary, as otherwise the crepe effect will be lost. It is seldom necessary to use any finishing agents on this type of material. If it is found that the goods are not soft enough when processed in this manner, a small amount of soluble oil may be added to the last rinse water.

◆

Cotton Ply-Twist Uneven

Technical Editor:

We are sending you one spool of our twist yarn. We are having trouble with this twist showing an unevenness when woven into cloth, and would like to have you advise us how we could handle this yarn to eliminate this trouble. (7265)

The obvious trouble with this yarn is uneven twist. The basic trouble lies in uneven single yarns. Both the white and black singles have some variations. In ply twisting, the heavy places in the yarns resist the twist more than the light places. The result is that the heavy places have much less twist than the light places, and this accentuates what differences originally existed. The trouble must be corrected previous to twisting.

◆

Soaking and Handling Tussah and Doupion

Technical Editor:

Will you kindly recommend methods for soaking and handling tussah and Doupion crepe. I am particularly interested in the soaking formula, emulsion used, time of soaking, and method of handling skeins for soaking. Any other information you might deem of value to a silk man who is going into this kind of work for the first time will be appreciated. (7236)

In order to throw tussah and Doupion so that it can be twisted properly, it must be soaked. Soaking softens the gum, which in these varieties of silk is very hard and not evenly distributed throughout the silk. It also facilitates the breaking up of the liaisons which hold the fibers together. Soaking lubricates the fibers so that they are not broken or roughened during the twisting, spinning, and drawing. Soaking makes the silk ductile, reduces the elasticity, and prevents static electricity from interfering with the processing. Again, soaking reduces the tendency of the silk to balloon on the travelers; and consequently, there is no interference of one thread with the other.

Bearing in mind the objects of soaking, the next step is to select the soaking materials which will give these results to the best degree. Two types of products are necessary. The first material is an oil, preferably a saponifiable, non-drying oil, such as olive or neatsfoot oil. It is this free oil which gives the silk practically all of the above-mentioned properties. These free or neutral oils, however, must be applied to the silk in a finely divided globular state. Inasmuch as these oils will not mix with water without an emulsifying agent being present, we introduce the second type of material necessary to soak silk. This is the emulsifying agent.

It is upon the difference in type of emulsifying agent

employed to disperse the oil in the soaking bath that many silk men differ. One type of emulsifying agent is soap and the other type is a sulfonated oil. In actual practice we find silk being soaked with a mixture of soap and oil, each of these commodities being purchased separately. The bath is made by dissolving a portion of the soap, and when this has been diluted and cooled, the neutral oil is stirred into the soap solution. This mixture forms a milky emulsion. Into this emulsion the silk is entered and soaked.

Where the sulfonated oils are used as emulsifying mediums, one finds that the sulfonated oil and neutral oil are blended together and sold as one product, commonly known as a soluble-soaking oil. It is called soluble because of the fact that when a so-called silk-soaking oil is mixed with water, a milky emulsion is produced without the addition of soap.

Soap and oil mixtures have both advantages and disadvantages. The chief advantage is that they provide a greater take-up of oil and soap from a given amount. This means that higher boil-offs of the thrown silk are obtained. Another advantage of soap and oil mixtures is that the components can be varied at will. One disadvantage of soap is the fact that heat must be available to dissolve the soap, and another disadvantage is that the soap does not pentrate the gum as thoroughly as the soluble-oil mixture.

Advantages of the soluble silk-soaking oils are: (1) ease of application; (2) complete penetration and softening of the silk; (3) better moisture-retaining properties; (4) more uniform results; and (5) less danger of mistakes in making up the soaking bath.

For hard-gum silk having an uneven gum content, such as tussah and Doupion, a soluble silk-soaking oil is often preferred. The temperature of the soaking bath is much higher than that employed in soaking other kinds of silk. This is due to the fact that the gum on this kind of silk is more waxlike and therefore requires a higher heat to drive the oil into the silk. It is considered that this is best obtained with a soluble oil. The percentage which has been found to be most satisfactory is 5% on the weight of the dry silk. It is preferable to start the soaking at a temperature of 150° F. and hold this temperature as long as possible without applying heat to the bath. The silk is soaked from eight hours to overnight.

Silk of this nature is coarse enough so that it is not necessary to soak it in nets. The books are opened up and the skeins are untwisted, laid out flat, and tied in bundles of seven or eight skeins. Never crowd a soaking bath. Therefore only 75 lb. of this kind of silk can be processed conveniently; whereas 100 lb. of a Japan silk can be handled. This means that this silk can be soaked in about 80 gal. of water. After the silk is soaked, extract as dry as possible and start winding while it is still damp. Run the humidity in the room as high as possible in order to keep the silk plastic.

◆

Imitating Tricot Net on Circular Machines

Technical Editor:

We are sending herewith a sample of tricot net. We have been asked to duplicate this on a circular knitting machine as nearly as possible. We have made a number of samples, but cannot get the holes clear; that is, one or more yarns are always crossing the openings of net at the back. We understand that underwear nets of this type have been made on circular machines. If you can give us information as to the necessary set-up for this, it will help us considerably. (7234)

THOUSANDS of inquiries are handled annually by the Technical Editors. In order that as many readers as possible may benefit from this service, we select problems of general interest for publication each week.

As far as we know, the only way to get real holes, not tuck stitches, is by actually removing the loop from one or two needles. To prevent raveling, the loops must be put on another, adjacent needle. It seems that the spring-needle machine is the only one suitable for circular work of this kind, as there is no regular method of transferring loops on the latch-needle machines. A special type of feed used with circular machines makes this transferring possible.

◆

Imitation Angora Yarn

Technical Editor:

We have had sent to us a sample of imitation Angora yarn, and we have come to the conclusion from examination that it is composed of a lustrous wool and a percentage of mohair, and would like your opinion on this subject. (7235)

The yarn is made from a blend of fine wool and a fine grade of mohair. We have separated the wool from the mohair sufficiently to reveal the fact that no luster wool was used. We are returning the separated fibers for your examination. Approximately the blend contains 40% fine wool and 60% mohair.

The use of the fine wool gives softness, bulkiness, and loftiness, making the yarn very suitable as a fingering (hand-knitting) yarn. A 100% mohair yarn would not be as attractive for the purposes for which this yarn was probably made.

◆

Warp Streaks in Finished Silks

Technical Editor:

We are having trouble with our finished silks on account of their being streaky in the warp. Many ways have been tried out to avoid the streaky effect. The warp is being made on the full bank of bobbins on the warping creel. The bobbins are put on the creel widthwise. The silk skeins are opened before soaking, and then soaked in an oil solution for 30 min. All this does not help at all. In our opinion, the streaky effect of our finished goods is due to the unevenness in the 20/22 silk. May we have your opinion on this subject. (7221)

The soaking period cannot be the cause of the streaky appearance in the finished material, providing the same oil

is used in all soakings and the warp stock is the same. The piece numbers will give you working data to trace the fault. Are the pieces which have this defect warped on one machine or do they come off different machines? If from one machine, the machine and creel could be gone over and trued up. However, if the pieces have been warped on different machines, a test would show whether the raw stock is uniform.

Cooperation is required in the entire department handling the raw warp stock. In changing from white to yellows or otherwise, the spotting of winder bobbins should be uniform and not scattered about over the creel. Spotting one and one, two and one, or up to five and one, will rid the shelves of all odd stock and leave the new chops free from mixture.

Section marks can be easily noticed, so we shall assume that they are not the cause. Pieces coming from different warping machines with the same defect indicate that the machines are all right. The soaking is satisfactory, and no odd chops are mixed. Are the winder swift weights uniform? Are the winder bobbins the same? Look over the creels and see that all the spindles are oiled and allow the bobbin freedom without dragging. A dragging bobbin causes trouble. Wooden or steel buttons on the creel might be sticky and need cleaning. Porcelain buttons become worn and the rough surface will cause dragging bobbins. A worth-while investment would be new porcelain buttons for the creel. The bobbins will run more uniformly with the new buttons.

Providing this streaky appearance cannot be eliminated with the above suggestions, there is but one more gate open, and that is to try a few pieces with a different finisher and note results. A few cents more per yard often produces wonderful results. The cost for better work is many times made up by a reduction in seconds.

◆

Bands in Rayon and Silk Stocking

Technical Editor:

We are herewith enclosing a piece of fabric supposed to be made of 150-denier twisted with two threads of Japan tram. What causes the light and the heavy parts in the material? (7223)

This sample, knitted from the rayon-silk twist, has extreme variations showing as bands in the fine ribbed leg. It is not practical to attempt to separate the twisted yarns and it is therefore difficult to tell the quality.

By marking normal and heavy bands, raveling the yarns, and weighing them, the following data was obtained:

Yards	Grains	Denier	Band
228	67.7	189	normal
198	62.7	202	heavy
12	4.1	218	very heavy

The silk in this case is stained green; and where the fabric is heavy the green is more predominant. From this it seems reasonable to assume that the silk causes the variation. This is more likely than that there is a variation of this kind in the rayon. Between the first and second lengths, there was a knot showing clearly a yarn change. There was no other knot in the sample.

If the rayon was 150 denier, the silk varied from about 39 denier to 68 denier. It showed clearly two threads in each place tested, but these must have varied greatly to produce the above effect.

Our judgment is that the silk is very uneven and causes the trouble. However, we cannot separate the twisted end and show the silk denier alone. It is not at all uncommon to have bands of this type in all-silk full-fashioned or seamless stockings, and such bands are recognized as the result of unevenness in the silk yarn itself. This is one reason why hosiery tram must be of a high quality.

◆

Streaks on Napped Fabric

Technical Editor:

We are sending under separate cover several samples of cotton and the fabric made therefrom. You will note that the dyed piece shows marks and stains. We shall appreciate your opinion as to the cause of these marks and the methods which we should use to eliminate them.

Sample A represents cotton yarn as we received it; sample B, cotton after soaking with oil; sample C, raw cloth; sample D, cotton after scouring and napping; sample E, cloth showing the marks. Our treatment is as follows: The fabric is first boiled for 20 min. with a scouring powder, rinsed with cold water, dried, and napped. It is then scoured again with 1½ lb. of scouring powder, 2 lb. of soda ash, and 1 qt. soluble oil. After scouring for one hour in an open reel machine, the fabric is rinsed and dyed in the same tub. We dye for 45 min. with the addition of 3% of penetrating oil and 4 lb. of glauber salt to the dyebath. Finally the cloth is well rinsed and dried on a pin-type tentering frame at about 110° F. (7216)

We have examined the samples of fabric before and after dyeing and also the yarn from which the cloth was made. The marks and stains apparent on the dyed fabric are not due to any fault in manufacture of the goods, but can be attributed to improper handling either in scouring or dyeing. There are several conditions which might result in streaks, and it is impossible to state definitely just what is causing them in this particular case.

The following suggestions, however, should enable you to eliminate the defect: After both the first and second scour and before rinsing with cold water, the goods should be well washed with hot water to remove all traces of the alkali and oil. After scouring, the fabric should be dyed as soon as possible and not allowed to lie for any considerable length of time; goods that remain wet in rope form are liable to develop streaks from partial air drying or from settling out of impurities. If the cloth is extracted, better results are often obtained by reducing the time in the extractor and not attempting to remove the maximum amount of moisture. With some fabrics it is preferable to use a full-width vacuum extractor or a water mangle rather than a centrifuge. The scouring materials are those ordinarily used for this class of work, but for the second scour it may prove more satisfactory if the quantities are increased somewhat. The temperature should be kept at a boil throughout the scouring operation; the time of scouring might well be lengthened to 1½ hours.

In addition to the streaks, the fabric showed some black stains. These were readily removed with carbon tetrachloride, but point to the necessity of keeping the machines clean of grease and oil.

New Machinery & Processes

Ozonizing Textile Fibers

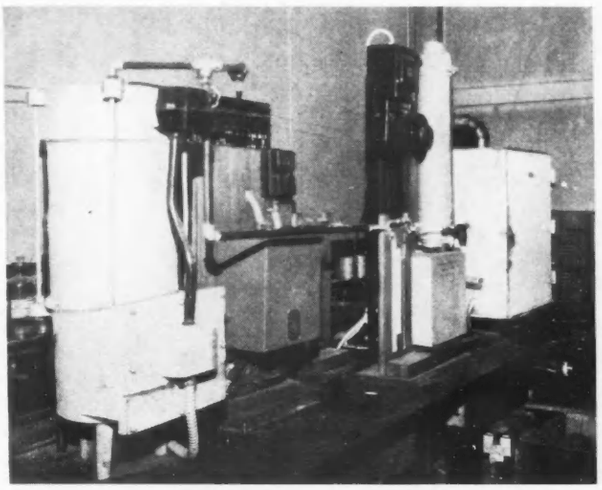
OZONIZING of textile fibers for the purpose of increasing their tensile strength is made possible by means of apparatus developed by E. K. Perry, research engineer, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. A number of years ago it was observed in the Westinghouse research laboratories that ozone treatment increased the tensile strength of cotton tape. This effect increased with concentration of ozone and rise in temperature up to a certain point, when it dropped off in the same degree.

Recent investigation seems to prove that the effect is not caused by a reaction of or with the cellulose fiber proper. Since the primary action of ozone is oxidation, the effect must be explained on the basis of this reaction. It is well known that oxidation of the cellulose molecule destroys it; and one would not expect increased strength on that basis. Consequently it was decided that the action was caused by some foreign material in the fiber. As the effect was first noted on a relatively crude unbleached cotton, this material was investigated and found to contain an appreciable amount of natural vegetable oils. These oils were removed from cotton yarn by the use of suitable solvents. Ozonization of the extracted yarn showed no increase in tensile strength, rather a small decrease. Since this agreed with the original hypothesis, the extracted yarn was then impregnated with small amounts of drying oils, such as linseed, cottonseed, or china-wood oil.

Tensile strength tests on the impregnated samples showed considerable decrease, but subsequent ozone treatment caused a decided increase in strength. It was concluded from these experiments that ozonization of relatively pure cellulose decomposes the molecules, that impregnation with oils lubricates the fibers and causes decreased friction, and finally, that, within limits, the oils may be cured so that intra-fiber friction is increased to a marked degree and the tensile strength of the thread increased as high as 35%. A slight increase is noticed on the individual fibers because of the coating of dried oil, but the main effect is caused by increased friction between fibers. This makes yarn failure due more to breaking of the individual fibers than to slippage past one another.

Improved Drop Wire

DEVELOPMENT of a new drop wire, which is said to eliminate many weaving difficulties, is announced by Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia, Pa. The outstanding feature of this drop wire is the super finish of the eye, which, it is stated, prevents any possible friction or chafing of the thread. It is also said that shiners on rayon, due to obstruction by burrs on the drop wire, are eliminated. A great deal of attention has been given to the selection of the steel from which the drop wire is made. The steel used, while very elastic, is also very "springy," thus permitting the drop wire to retain its original straightness indefinitely, even under severe bending and abuse.

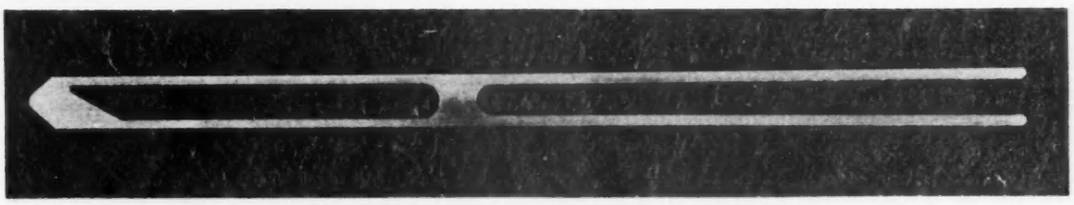


Apparatus for ozonizing

Opening-Up Machine

OPENING-UP of silk fabrics and other piece goods is facilitated by means of a machine introduced recently by King & Gerber Co., 434 Graham Ave., Paterson, N. J. In silk-weighting the new machine is especially adapted for opening up the fabric between passages of tin, in the finishing room, and after dyeing and extracting. It is stated that use of the new machine makes it possible to open up goods at a speed of 40 yd. per minute, and at the same time prevents fraying or chafing of the fabric and possible injury to the workers' hands.

The method of operation is exceedingly simple. The goods in rope form are dropped into a tub that revolves on roller bearings. One end of the fabric is fed over the top roller, and the machine is started. The goods are then automatically opened up and delivered on the table, folded. The operator simply turns the tub to untwist the goods, the machine does the rest. The machine is



Improved drop wire

Mechanism for opening-up silk fabrics and other piece goods

made in two models—for one and two operators. The smaller model operates at 40 yd. per minute and the larger at 80 yd. per minute.

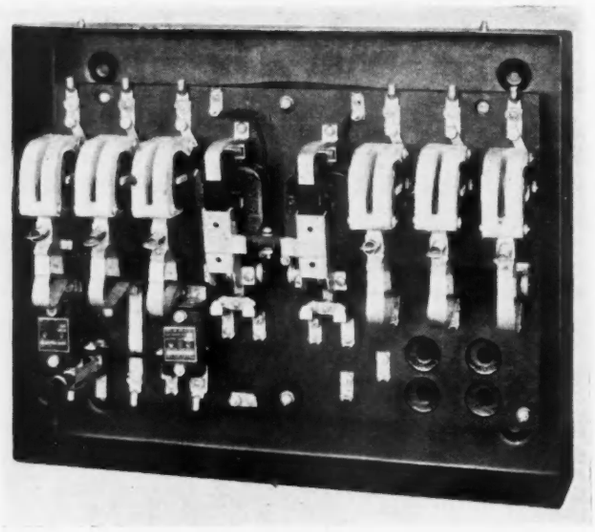
Magnetic Reversing Switch

RECENTLY announced by General Electric Co., Schenectady, N. Y., is an enclosed, magnetic reversing switch of a new design. This switch, designated CR-70009-B-18, which supersedes the CR-7009-B-5 switch of the same type, is characterized by the ability to control motors of greater horsepower than those controlled by the superseded type.

The new device is designed to throw small a.-c. motors directly across the line. It consists of two triple-pole, mechanically-interlocked, magnetically operated contactors with restricted-type blowouts, and with a normally open interlock on each contactor. It also has two hand-reset temperature-overload relays. The contactors are mounted side by side on a molded base, instead of back to back as in the previous design. The device is contained in a drawn-shell, steel enclosing case.

Hand Jointer

NEW safety and cutterhead features are incorporated in a hand jointer placed on the market recently by J. D. Wallace & Co., 134 South California Ave., Chicago. To permit production of a smoother and cleaner surface, the jointer is equipped with a skew-knife cutterhead. This head is said to be particularly valuable in planing cross-grained material, giving even on refractory woods a surface that can be prepared for finishing with a minimum of labor.

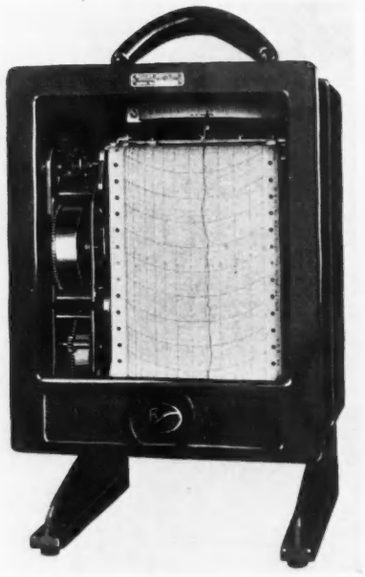


Magnetic reversing switch

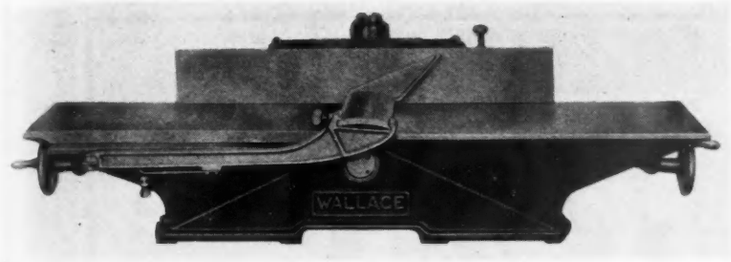
The cutterhead is so designed that a simple, flat bit can be set and locked by an operator of average ability. Likewise, the skew angle is fixed so that one end of the knife leads the other by approximately ½ in., so that the curvature of the cutting circle can be eliminated by the joining operation. High-speed Timken roller bearings are employed for mounting the cutterhead. An improved safety guard over the knives provides protection to the operator.

Graphic Instruments

GRAPHIC instruments in switchboard, wall, and portable models for direct and alternating current, and as ammeters, voltmeters, wattmeters, and power-factor meters are announced by Roller-Smith Co., 233 Broadway, New York. Among the outstanding characteristics of this new line of instruments are included light but rigid cases, positive chart drive, and ready accessibility of all parts. Other features are electrical mechanisms



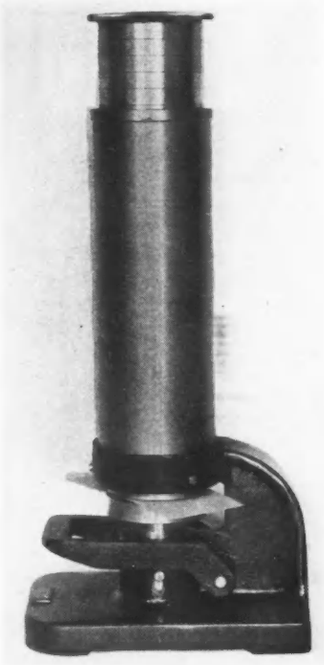
Portable model graphic voltmeter



Hand jointer

of high torque, minimum pen friction, magnetic clamping, and eight-day clock.

A detachable cover makes convenient the insertion of new charts, filling of ink well, and other adjustments. To facilitate still further the making of adjustments when the instrument is in service, the clock, chart mechanism, and electrical mechanism are mounted on a common sub-base, which can be unlatched and swung outwards from the case. Both a.-c. and d.-c. instruments are alike as regards case, base, and clock mechanisms; the sub-base is drilled differently to accommodate the various a.-c. and d.-c. movements. Standard instruments cover ranges required for most graphic-instrument measurements, while special ranges and types can be supplied to suit other purposes.

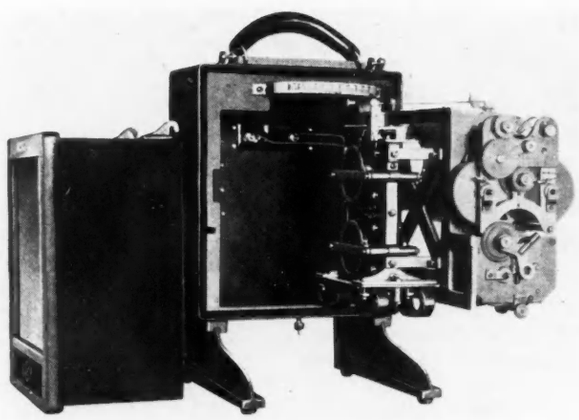


Improved densometer for textiles

An Improved Densometer for Textiles

MEASUREMENT of the compactness and porosity of textiles is facilitated by means of an improved type of Densometer placed on the market recently by W. & L. E. Gurley, Troy, N. Y. The instrument enables the determination of the time required for a known amount of air to be forced, under approximately constant pressure, through a known area of the material to be tested. It is believed that the device will be of especial interest to manufacturers and consumers of textiles of various types, such as blankets, parachute, balloon, and airplane fabrics, sail cloth, vacuum-cleaner-bag fabrics, and other materials where resistance of the fabric to the passage of air is a matter of considerable importance.

In the paper industry, the instrument has found application for determining the degree to which paper and cardboard absorb sizing, ink, coatings, etc. It seems probable, therefore, that in the textile industry, it may be of value in measuring the extent to which fabrics of the same construction—but processed in different ways—will absorb dyestuffs and finishing compounds.



Graphic voltmeter with sub-base swung out to facilitate inspection and adjustment of mechanism

The Densometer consists of two cylindrical cups, the inner one being inverted and fitting loosely into the outer one, which is half filled with a light oil. The weight of the inner cylinder forces air down through a tube to an orifice, 1 sq.in. in area, which is covered by the material to be tested. The material is clamped between two plates. The Densometer reading is the time required for 100 c.c. of air to be passed through the fabric, as measured by rings on the moving cylinder passing the upper edge of the outer cylinder.

While the instrument as originally designed was limited largely to testing paper, the improved type is suitable also for general use with textiles. For example, with the new model just developed, it is possible to substitute for the usual standard cylinder, a special light-weight cylinder.

In addition, the standard orifice may be replaced by special smaller orifices. The combination of these two optional variations in the testing equipment makes it possible to obtain fairly high readings even on porous cloth. Another improvement in the adaptability of the Densometer as a textile-testing instrument results from the improved clamping device of the new model. Since the orifice and the clamp are no longer a part of the movable cylinder, the design of the clamp is not limited by weight and has been considerably improved, the sample being held between self-aligning plates by means of a heavy spring.

The clamp is open on one side, permitting the insertion of the edge of any sample, no matter how large. Furthermore, the plates may have sharp flanges to become imbedded in the material without cutting it, stopping surface leakage of air on rough materials.

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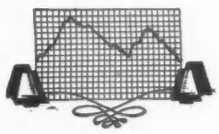

Raw Silk Near End of Long Decline

Stabilization by August and Rise in September Likely, Says Dr. Haney

LIQUIDATION of excess supplies of silk has been going on with a vengeance. Futures have fallen to the lowest levels on record, and spots are the lowest since 1914 or 1893. While there has been only about the usual annual increase in world production of silk, consumption has failed to increase in proportion,—a story which is told by several other commodities, including sugar.

The question now is, will the final wave of liquidation be attended by a dumping of the entire surplus that has accumulated during the last year, for what it will bring, or will the brakes be kept on and the liquidation be finished in a gradual manner? Now that so much silk has been held so long in Japan and the price has fallen so low, it would seem unwise to unload it all in a block. Probably, therefore, we may expect the more gradual method to be adopted. Moreover, it seems practically certain that silk prices, when finally stabilized, will be at a permanently lower level, and that one result will be that silk will hold its place among the textile fibers. It is practically certain that consumption will be stimulated.

Bull Points

The following factors are tending to support the silk market:

1. A large part of the Japanese cocoon crop has been sold, and plans are reported to be under way for curtailing the summer and fall crops.
2. The bulk of Japanese silk is in custody; Japanese Government may aid reelers by advancing the carrying charges on stored silk.
3. There are low raw-silk stocks at New York, and very low imports.
4. The silk deliveries in this country are in line with actual mill consumption

SUMMARY

Although Japanese stock of raw silk continue enormous, prices have now reached liquidating values. As soon as the visible supply begins to recede prices will probably rise. Stabilization by August and some advance by September seem logical expectations.

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The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Resarch Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

5. New York wholesale sales of silks (yards) in May were above a year ago.
6. Considerable progress has been made in liquidating inventories, and sharp curtailment of production in May and June should help relieve the goods markets.
7. Silk is very cheap and is offering more effective competition to rayon and cotton textiles.

Bear Points

Tending toward lower silk prices are the following:

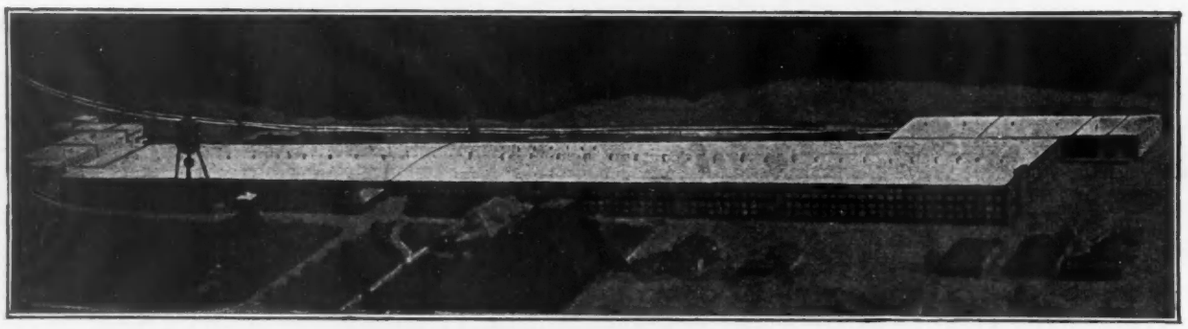
1. Acute weakness exists in Japanese markets; under banking pressure, Japanese reelers are selling futures heavily.
2. Uncertainty prevails as to the disposition of warehouse stocks in Japan.
3. World visible supply makes record; quantity in transit shows sharp seasonal increase.
4. European silk industry is much depressed.
5. Cutters and manufacturers are extremely cautious.
6. There is a large decline in domestic deliveries, bringing them to the lowest level in six years.
7. Wholesale silk sales at New York declined sharply in May.
8. A considerable yardage of spring goods still remains to be liquidated; Philadelphia Reserve Bank reports manufacturers' stocks larger than a month and a year ago.
9. Silver exchange continues weak.

Compared with our summary of a month ago, there is little change for the better in the balance between favorable and unfavorable factors as affecting the nearby outlook. The wholesale sales of silk textiles are not as good, manufacturing curtailment is sharper, and the world visible supply of raw silk has increased. These developments are sufficient to explain the further decline in price. Some further weakness is to be expected, but progress in real liquidation has been made so that the market is obviously nearer the end of the decline.

Statistical Position

All items point downward, and it is hard to say which is the most significant. Perhaps as a barometer, the continued low level of imports it to be stressed. In June, we imported only 26,369 bales, according to the Silk Association, which is less than one-half the quantity in the same month of the two preceding years. Imports were only 76% of deliveries, which is extraordinarily low. This suggests the possibility of a further reduction in domestic stocks, although the seasonal jump in the quantity in transit to 16,300 bales is something of an offset.

As to New York stocks, at 28,450 bales they show a further decrease, and



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are the smallest for the month since 1924. This fact, however, is reduced in significance for the reason that June deliveries were so low that the stocks are about 97% of indicated monthly requirements, which is ample. Stocks of Japanese silk at New York fell sharply to about 18,446 bales.

Deliveries fell sharply, as was expected, and are also the lowest since 1924. Probably they are the farthest below normal trend since early 1922. The figure is 37% below a year ago. This shows at least two things: (1) Estimated deliveries are now truly reflecting domestic consumption; (2) Mill activity has been greatly curtailed. A real readjustment is thus indicated, and it is only a question of time before curtailment of manufacturing will correct the situation in the goods markets.

The total visible supply of raw silk, however, has reached a new high record, at 178,750 bales. The quantity available in Japan at the end of June increased 5,000 bales to the total of 134,000 bales.

Our barometer of demand and supply, based on the total New York and Yokohama stocks as compared with domestic machinery activity, continues very unfavorable, although signs of a possible turn for the better may be seen. The average stocks at the two centers during the last three months have been 261% of the average in recent years, or 2.6 times. This compares with an index of domestic machinery activity, which is only about the average of recent years and is declining sharply. (Fig. 1) The excess supply as compared with current requirements is thus enormous and record-breaking.

Probably no sustained recovery in silk prices can occur until a reduction in this excess begins. *Note, however, that prices always begin to firm up very soon after the trend of stocks changes.* We can say that in June the combined stocks at New York and Yokohama showed a decrease, and it is rather probable that next month will at least show a less rapid increase than is usual for the season. Thus, a turn for the better is suggested sometime within a month, although it can not yet be definitely announced.

Price Trends

Cracks XX fell at least 80c. in the New York spot market during June, and since then a decline of at least 15c. has occurred. The June average price was $3.41 which compares with $4.24 in May and $4.99 a year ago. The June average was about 45% of the average during 1922-25. The decline in the monthly average was the sharpest since April 1924. (Fig. 2).

This decline was preceded by a very sharp May recession in spindle activity and also in wholesale sales of silk textiles at New York. Probably the declines in both were extended in June.

The situation resembles 1924 in a good many respects. General business depression exists. There has been a prolonged decline in silk deliveries. Imports of raw silk are almost as low as then. It differs notably in that silk is much cheaper than in 1924. On the other hand, the visible supply is now much larger than then, and it is probable that the invisible supply is also larger, as the reported large "deliveries" have long been greater than could be explained on the ground of actual mill consumption.

In 1924, silk prices hit bottom in June. Thereafter machinery activity, deliveries, and prices all turned upward with the general recovery in business. While a similar turning point is bound to occur in the present instance before many months have passed, it is quite apparent that this time the readjustment will take somewhat longer. General business recovery is not in sight for at least three months, and it is doubtful how sharp the recovery will be when it does come. But the process of readjustment is under way. Deliveries are in line with consumption, and this will allow a reduction in the invisible supplies. Already domestic visible stocks are very reasonable. The suggestion made a month ago that recovery might be expected in August may prove to have been a little over-optimistic, but it should be remembered that once silk prices start to rise, buyers will take hold actively at $3.50, who would not look at silk at $3.00. At least stabilization by August continues to seem probable.

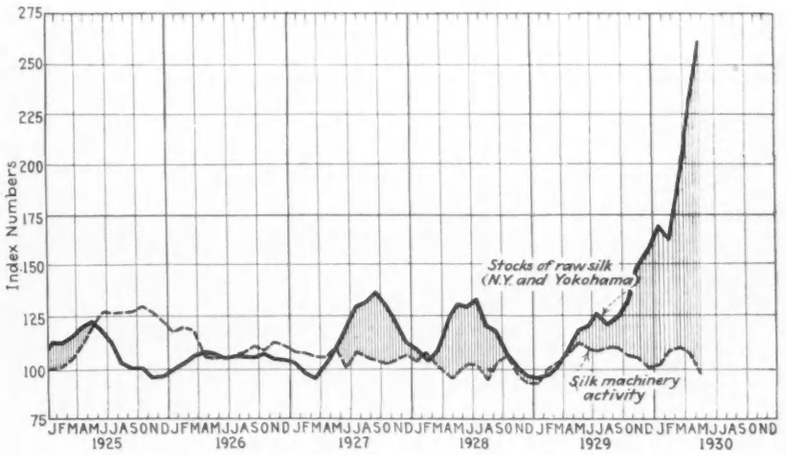

Fig. 1. RAW SILK STOCKS AND MACHINERY ACTIVITY. Stocks—N. Y. and Yokohama, adjusted for seasonal variation, three-month moving average; N. Y. Stocks, Silk Association; Yokohama Stocks, H. L. Gwalter & Co. Machinery Activity—Composite of spindles and looms adjusted for seasonal variation, Silk Association. Average 1923-1927 = 100 for both indexes.

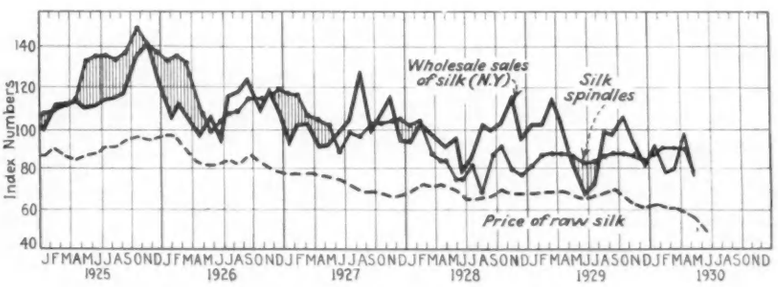

Fig. 2. SILK TRADE BAROMETER—Price of Raw Silk—Average of high and low Thursday prices of Crack Double Ex. (Journal of Commerce). Spindles—Per cent of available machine hours operated (Silk Association of America). Wholesale sales of silk (N. Y.) adjusted for seasonal variation (N. Y. Federal Reserve Bank). Average 1922-1925 = 100 for all indexes.

The Textile Trend

Cotton Textile Markets: Since their comeback from the low prices of a few weeks ago, print cloths have furnished the bulk of cloth market interest. Prices are firm at the higher quotations and strong holders are passing up lower bids. A few second-hand offerings at concessions were quickly bought up, which leads to belief that potentially large buying power exists. Other gray goods were inactive. New denim prices on low basis are ex-

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Wool Textile Markets

Wool goods markets are in a seasonal lull at the men's wear end. Women's wear lines show some improvement in coatings and interest has been noted in crepes and crepe broadcloths for quick delivery. Makers of these goods, however, still lack business that would carry them through the early fall. Another delay in tropical openings seems probable. Lack of buying interest by the trade has made it advisable to withhold new lines for another week. Girls' and misses' coat manufacturers are buying chinchillas and pile fabrics in a small way, suggestive of sampling. Lack of interest in worsted yarns; prices spotty but holding fairly steady.

Silk Textile Markets

Short covering on Japanese silk exchanges caused a quick up-swing in raw silk quotations at the beginning of the current week. Greater interest was apparent throughout all silk markets when market maintained gains. Thrown silk became firmer, although prices were still nominal and irregular. Greater interest was evidenced, but buying was still scattered and in small volume. Spun silk still in seasonal lull with market in healthy shape; outlook good. Broadsilk mills were more cheerful at consumer interest in fall goods.

Knit Goods Markets

Fair business was seen in the hosiery end this week and the comparison with former weeks was quite favorable. No particular lines were outstanding in activity, pick-up was more-or-less general. Spring prices were made on infants' socks and anklets at practically unchanged levels. Bathing-suits are showing a tendency to quiet down especially in the East where weather has been unfavorable. Heavyweight sweaters show signs of greater activity although not pronounced. Berets and polo shirts important. Little change in underwear lines, lightweights continue in the limelight. No improvement noticed in heavyweights yet.

Mill Share Buying at Low Ebb

Trend Generally Downward With Some Activity in Merger Stocks

Boston.

PRICES on mill shares were very irregular during the week, speculative interest at a minimum except on one or two stocks which seem to have merger possibilities. In this class may be mentioned Nashawena in which there has been accumulation for several weeks between 19 and 20. A large out of state banking interest is said to be the buyer, the stock standing in the name of a brokerage concern. Whitman shares were bought at a dollar with a larger offering at $2. Whitman mill notes on which no interest default has yet been made have sold at 40, it is said.

The average price of a group of New Bedford mill shares this week stood at 30.71 as compared with 35.12 a month ago. A group of Fall River mill shares averaged 29.14 as against 32.66 a month ago. American Woolen shares receded during the week, the preferred to 28¾ the low for the year being 19¾ while the common fell to 10⅛ with the year's low at 7½. Pacific Mills gained a point to 23, and Amoskeag a point to 13. The Boston stock auction was featureless only 217 shares being sold of which 120 was Naumkeag at from 85 to 88.

Dwight Has Large Deficit

At the annual meeting of stockholders of Dwight Mfg. Co., cotton goods, Chicopee, Mass., and Alabama City, Ala., retiring officers and directors were re-elected. The treasurer's report for the year ended May 31, 1930, indicates profit and loss deficit at the close of the year of $1,316,300, an increase of $825,883 during the fiscal year. This represents loss from operations during the year after all charges including depreciation and extraordinary deductions. Write-down in inventory due to drop in cotton prices was $245,000; cost of moving machinery from one mill to another, $99,000; loss from short-time operation of various mills, $321,000; loss by sale of goods below cost, $124,000; loss on sale of Newburyport mill in October, 1929, $37,000.

A large part of the machinery in the Chicopee mill has been moved elsewhere. Depreciation account as of May 25, 1929, totaled $563,188 from which there was a reduction of $60,594, of accrued depreciation, and an addition of $265,640 representing depreciation during the 1930 fiscal year, leaving the account at $768,235 as of May 31, last.

The company had goods on hand May 25, 1929, aggregating 9,749,923 yards. There was manufactured during the year 52,055,983 yards, leaving a total to be accounted for of 61,805,906 yards. Sales in yards during the year were 50,607,693, leaving on hand May 31, 1930, 11,198,213 yards. Dollar sales during the year amounted to $8,882,885 and income from the bleachery, $591,290, leaving gross income $9,474,175.

Fairhaven Real Estate Corp.

The Fairhaven Mills Real Estate Corp. has been organized to take over the real estate and bank loans of the Fairhaven Mills, New Bedford, Mass., following the public auction of the Fairhaven Mills property held last month, at which the land and buildings were bid in by Fred W. Green, acting on behalf of the bank creditors. The new corporation has a capital of $200,000 7% preferred stock and 20,000 shares of no par common stock. The preferred stock is held by New Bedford banks in exchange for bank loans remaining unpaid. The no par common stock is held by Henry S. Knowles, John M. Bullard and Seabury Stanton, acting as trustees for the preferred stockholders of the Fairhaven Mills, to whom will accrue any residue or equity which remains after the bank loans as now represented by the preferred stock have been paid off and redeemed. Elmer A. MacGowan was elected president and Arthur C. Himes clerk and treasurer of the new corporation.

Lamport Planning Mergers

Interest in textile consolidations was quickened this week by the report that Samuel C. Lamport, president of the Lamport Mfg. Supply Co., is planning to give his attention to mergers of fine goods mills. He has already been identified with the merging of several mill enterprises and also of finishing plants. The company of which Mr. Lamport is head operates a large sorting plant at the State Pier in New Bedford, Mass., where pieces and remnants are assembled for storage and shipment. On April 10, 1929, Mr. Lamport purchased control of the Lawton Mills, Plainfield, Conn., which manufactures fine goods. Mr. Lamport has just completed a banking merger in New York in which textile interests are prominent. The banks combined are the Broadway National Bank & Trust Co., the Plaza Trust Co. and the Park Row Trust Co. Among the directors of the consolidated banks, which will be known as the Broadway and Plaza Trust Co. are executives of Deering, Milliken & Co., M. C. D. Borden & Sons, Inc., Joseph Bancroft & Sons Co., and the United States Finishing Co.

Whitman Position Outlined

Further financing by the Whitman Mills, New Bedford, Mass., or consolidation with other textile interests is in prospect. George W. Pope, treasurer of the company denies that any bank loans have been called, but that several notes have recently been renewed and that the company has no further maturities falling due this month. Whitman Mill 6% notes have been selling at a discount from their face value, recent sales having been made at $50 per $100 note. It is said that brokers identified with the Berkshire Fine Spinning Associates have been very heavy buyers both of Whitman stock and notes. Banking support accorded the corporation is

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also said to be closely allied with the Berkshire group, and this has given rise to predictions that merging of the Whitman with the Berkshire group is at least a possibility in the near future. Mr. Pope denied that Charles L. Harding, president of the Whitman Mills, has severed his active connection with the corporation.

"No doubt some of the rumors may have their foundation in our recently undertaken curtailment policy," said Mr. Pope. "We have closed down our spinning plant and laid off between 100 and 200 employes on that account, some of them being minor executives. This is due to the company having undertaken to curtail production at least one-third between now and the close of the year. We have certain uncompleted orders on our books which we are finishing up, but we have now made up all the yarn necessary to complete these orders, and hence are running only our weaving department. We are operating about 3,500 looms closing down the carding and spinning departments because we do not wish to tie up money in yarn until we know just the sort of yarn we shall need. These departments will be started up again just as soon as there is business enough in sight to warrant their operation."

Boston Stock Auctions

The following sales of textile shares were made at Wednesday's auctions:

Shrs.	Mill	Par	Price	Change
54	Associated Textile	...	35-36½	....
20	Quissett	100	52½	+ ½
120	Naumkeag	100	85-88	....
10	Dwight	25	2½	+ ½
13	Berkshire, pfd.	100	65	—4
217	Total.			

Charlotte, N. C.—The weekly summary of southern cotton mill stocks as compiled by R. S. Dickson & Co. shows a decline of 76c. a share for the week ending July 12 in the average bid price of 25 stocks. The close for the previous week stood at 73.80%. Trading was quiet throughout the week in the preferred as well as common stocks, with bids limited principally to the better grade or dividend shares.

Burlaps Prices Easier In Slow Trading

Weaker Calcutta cables caused declines of 5 points in spot and afloat quotations at mid-week. The easier tendency was noticed in heavyweight shipments more than in the lightweight goods. The market was quiet with little demand for either spots or future goods.

The 8 oz. 40s for spot, two weeks arrival and July shipment were 4.75c. The 10½ oz. 40s for spot and two weeks arrival were 6.10c.; July shipments, 6.05-6.10c.

Cotton Spinners' Margins Small

Yarns Sell on Basis Of 10c. Cotton

Philadelphia.

Carded weaving yarns and especially counts finer than 20s, up to 30s, are particularly weak, and have suffered most during the decline; spinners' margins on such numbers are the smallest witnessed for many years. Spinners of carded knitting yarns are slightly more favorably situated, but, here, too their margins have suffered drastically. Combed spinners' margins have held up materially better than either carded weaving or knitting spinners.

A year ago, July, 1929, spot cotton was quoted around the 18½c. mark, early this week spot cotton was quoted at 13.10c., a difference of almost 5½c. When we examine yarn prices, we see that carded weaving counts have suffered extensively in spinning margins. Last July 20s-2 warps were quoted at 34½c.; this July we find the sales at 25c., making a fall of 5½c. in cotton and a fall of almost 10c. in yarn in this count.

Carded Knitting Margins

Taking 30s-2 warps, a similar condition from spinners' standpoint is found, 30s-2 being quoted at 30c. at present, or 9c. under the price a year ago, in the face of a 5½c. decline in their raw material. Carded knitting yarns show these spinners have been able to hold their position slightly better. Carded knitting counts have declined from 30c. level for 10s a year ago to present 23c. level for same number, a drop of 7c. in face of 5½c. in cotton. These figures give an idea how much ground has been lost in year by carded spinners.

Carded weaving spinners have lost approximately 4c. from their spinning margins of a year ago, and from this it may be seen why comment in the trade is to the effect that carded yarns are now selling on the basis of 10c. cotton.

Combed spinners in most instances have held the situation better in hand, not accumulating the excessive stocks that weaving-yarn spinners of carded qualities have, and therefore have been receiving a better margin within recent months. Combed prices at present are the firmest on the entire list, although there are more numerous reports than spinners' list prices are being cut considerably here and there.

Combed spinners, and especially those handling two-ply counts only, have held their stocks to within reasonable limits during recent months, and one factor states he does not believe that more than 1,000,000 lb., of combed yarns could be bought at distress prices being quoted by spinners here and there without taking these low priced spinners out of the market for the next few months.

Curtailment Still Needed

Carded weaving spinners, unless they curtail production of counts from 20s-2 to 30s-2, will undoubtedly make a bad situation worse, and further narrow margins that already are too ridiculous to talk about. Fortunately there has been some progress toward curtailment, but all agree that more serious steps must be still be taken in that direction.

This week 20s-2 warps have been sold at 24½c. and 30s-2 moved at 30c. Hosiery cones, which have become less active both in respect to new business and specifications on old orders, have been quoted at 23½c. Sales have been made in small lots at ½ c. under that level. Dealer's stocks have held their own within the last month or have declined slightly.

Though yarns are cheap in proportion with raw material, manufacturers are unwilling to buy large quantities ahead, believing that it will pay them to wait until more accurate information concerning the crop is available. This will not be procurable for two months and although improvement in spot merchandise is anticipated during this time few look for sustained forward contracting by the majority of manufacturers.

●

New York.—So far, the month of July has been better than June for carded yarn sellers. Orders have been more numerous and volume has increased. Recently sales, however, have fallen off from the higher levels established about ten days ago when there was a fair sized spurt.

Dealers stated that actual business the early part of the current week was spotty and more or less confined to inquiries from insulators. Little was heard from knitters and tire fabric manufacturers were very quiet.

Prices remain at low levels, but a few believe that bottom has been scraped and that present quotations will hold unless cotton prices should fall off. For many weeks the market has appeared bottomless; no matter how low a spinner quoted, there was always someone else willing to go a fraction lower. In recent days this trend has been less apparent and sellers state that spinners have turned down firm offers which would have been acceptable the week before.

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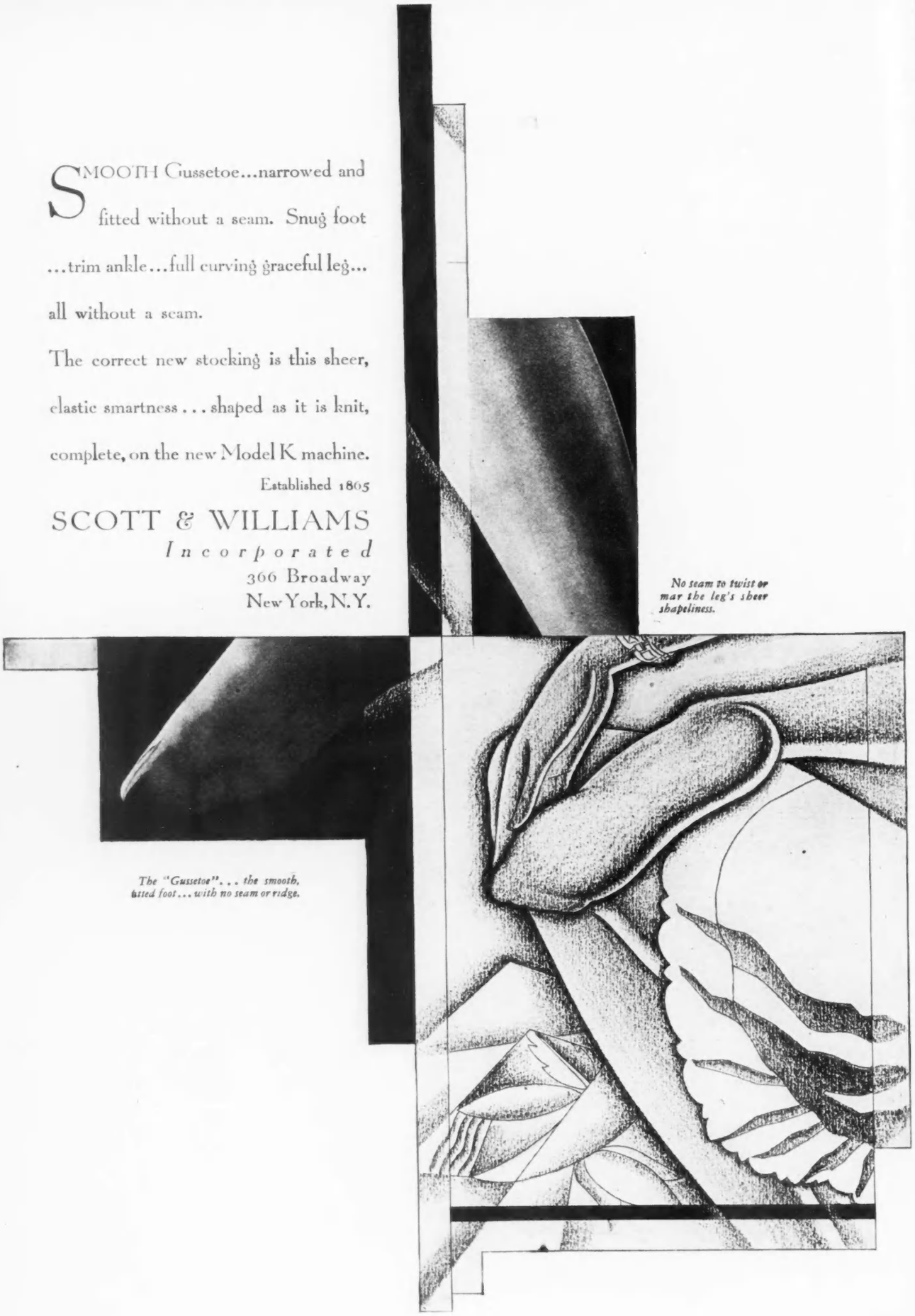

No seam to twist or mar the leg's sheer shapeliness.

The "Gussetoe"... the smooth, fitted foot... with no seam or ridge.

that sellers are now talking about the possibilities of an improvement rather than looking for further weakness.

●

BOSTON.—An unsettled condition continues the main feature of the yarn market. Some consumers seem more interested in liquidating their manufactures at prices below yarn cost than in buying a little yarn ahead for future consumption. July to date has not witnessed any expansion in yarn purchasing; prices continue to droop, cotton still exhibits a downward trend, and curtailment is proceeding.

Yarn buyers are in an apathetic mood, encouraged in no wise by the low prices offered, and quite emphatic in refusal to consider purchases until the goods situation looks more promising. Spinners on the other hand, beginning to realize hard facts, are refusing to take business on yarns at prices which are based apparently close to an 11c. cotton basis. Cotton may get down to that price—but who knows? Spinners therefore are refusing to book business running through August at today's prices.

While some spinners have some stock yarn on hand, consisting of staple numbers, it is not enough to be a burden, as most spinners have avoided running to stock. All indications point to lack of spot lots in consumers' hands. Most of the low offers take place on numbers between 20s-2 and 30s-2. A few sales were consummated on the low side of quoted levels. A better interest is reported in offerings of higher count carded yarns for specialty purposes. Combed yarn demand was again light. Single yarns for knitters sold best. Mercerizers report a slow period, but in some quarters a fairly satisfactory business was done during June.

●

WASHINGTON, D. C.—The Argentine market for carded cotton yarns was fairly good during the second week of July with prospects that orders will be placed within the next few weeks. Business in mercerized yarns was quiet, according to a cable from Acting Commercial Attaché James G. Burke, Buenos Aires, to the Bureau of Foreign and Domestic Commerce.

●

CHATTANOOGA, TENN.—Drastic reductions in the price of both combed and carded yarns have featured the local market during the last 10 days. Just prior to that two-ply mercerized had dropped. No further changes were reported in this type.

Carded cone prices on July 14 stood at 23½ to 24c. for 10s and at 25½ to 26c. for 20s. This is a drop of about 3½c. in two weeks.

During the period combed singles had been reduced by about the same amount. The 18s are now offered at about 35½c., while 70s are bringing 68c. Two-ply mercerized is offered at 78c. for 60s-2.

Double extra thrown silk has taken another tumble and is now being offered at $3.50 a pound.

Worsted Yarns Are Quiet

Demand Waits for Fall Goods Buying

PHILADELPHIA.

THERE is now a smaller demand for yarns than was noted during June, and indications are that the present month will be less active for both spinners and selling agents than last month. One spinner in this district who was operating at 60% last month is now on 40% basis, and this is representatvie of others. Buying by manufacturers for summer merchandise, such as bathing-suits, has been completed, and new spinning orders depend upon fall goods, which are not yet moving well.

Confidence of manufacturers has not yet been helped by the decline at London wool sales, and even taking into consideration the fact that English values are considerably under ours, many have pointed to this as a reason for looking for lower yarn prices. Yet it may be mentioned that the United States is the cheapest market at present, and London can decline much further in most grades before the domestic price level will allow importation with profit.

MORE SWEATER YARN SOLD

There have been two bright spots in an otherwise dull picture. Outerwear spinners have in several instances found more demand from sweater manufacturers, which they are anxiously awaiting, having booked orders for two-ply from men's sweater manufacturers and single counts to go into women's sweater coats. Demand from these trades will probably expand within next month for fall merchandise.

Although the price level cannot be said to be strong, there has been no change in spinners' quotations; manufacturers have lowered their ideas slightly in view of London wool sale. Small lots are moving at current quotations level, but where large quantities are involved spinners make concessions.

Specifications on men's wear yarn contracts are good at present, due to the fact that end of their season is close at hand, and manufacturers are rushed to get out all the production they can within a short space of time. For this reason deliveries of mixtures are large, but promise to hold at this level only for three to four weeks, when drop will occur.

Spinners do not have a large volume of unfilled orders on their books from men's wear mills, and the new season, when it begins, will see placing of new business as soon as goods orders are placed with manufacturers. It is frequently noted that at the end of a season there is large amount of yarn undelivered that hinders placing of new business for the next season, but this will not be true this fall.

EXTENSIVE SAMPLING FOR FALL

There has been a large amount of sampling by outerwear manufacturers during recent weeks, indicating that August will see placing of yarn orders to go into fall knitted outerwear which is expected to be of sufficient volume to total larger than business placed with spinners the first half of this year. Unfilled orders are few in number, and stocks of yarns in manufacturers' hands are practically non-existent.

Yarns to go into tams or berets have been exceedingly active, but well-informed factors believe that the crest of this demand has been seen. They point out that the cheapening process has already begun in these yarns, manufacturers selling berets for such low prices that worsted and woolen spinners will find it more difficult to compete than in the past. A large number of woolen and worsted spinners have entered this field, turning out a kind of mohair and wool yarn that imitates angora.

While there is less activity this month than last, spinners are more optimistic concerning the future than they were, predicting that a large volume of new business will develop within the next month for fall goods.

◆No Forward Spun Silk Buying

SPUN silk continues quiet although the time when fall buying would normally start is at hand. It is noticeable that fabric manufacturers of all types are occupied with considerations other than the purchasing of raw materials. When this delayed demand will start is a question, but silk spinners do not expect much in the way of forward business until goods business is moving more rapidly.

Prices are nominal with some irregularities, but no pronounced signs of weakness. Buying last week was mostly of the filling-in type, to take care of current sales of manufacturers. A bit

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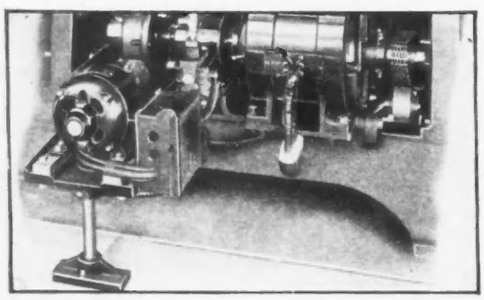

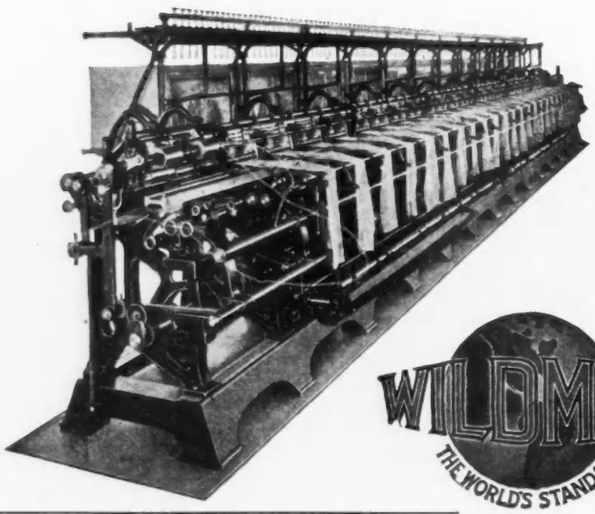

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of contracting cropped up from time-to-time, but dealers stated that there was nothing substantial.

The active demand for shantungs and well cleared out stocks of this kind of merchandise enhance the outlook for spun silk the coming year. The price of raw silk is an important factor, but the recent advance in quotations has had no reflection in the spun silk market as yet.

◆More Favorable Thrown Silk Interest

THE upturn in raw silk brought in its wake a firmer and more active thrown silk market. By the middle of the current week greater strength was noticed in yarns, although quotations remained nominal and irregular. It was the belief of throwsters that while the market might show a gradual decline, recent prices had established a resistance point, below which prices were unlikely to go.

The stronger tone had not run long enough to cause a great degree of reflection among consumers, although there were a few weavers who followed up the advance. This resulted in moderate-size orders in scattered instances, but there was no general movement toward covering yarn needs.

The lack of activity during the period of the decline made even this slight amount of buying favorable by comparison. Throwsters took some cheer from the increased interest even though it did not result in orders in the majority of cases.

Covering of fall needs by weavers has been very backward so far, and the time is near at hand when yarns will have to be purchased for new-season goods. When this covering will start is a moot question, but throwsters are inclined to believe that it may develop suddenly. Consuming trades have demonstrated that they are watching the market closely, and, if silk shows that it is becoming stabilized, buying could conceivably start up over night.

Rayon Buying Interest Lags

Talk of Price Cutting Continues in Some Quarters

RAYON buying remains light and has not changed much in character for the last two weeks. Producers took some consolation from the rise in raw silk and the greater degree of steadiness in that commodity. It must be borne in mind, however, that silk is still on a very low basis. The price will have to be considerably higher before this pressure on rayon yarns is relieved, especially on the cupro-ammonium yarns of 100 denier and finer. Even at present levels, silk manufacturers expect that consumption of their goods will be considerably increased due to more popular prices.

Customers Watch Market

Talk of price cutting has not died out although neither side has broken the deadlock. Leading producers claim that they are adhering to list prices and consumers cite instances where they have received offers at concessions. The entire volume of trading is small and it is probable that only a fraction represents business taken at "insides." Nevertheless, quotations are irregular enough to make consumers undecided as to the stabilty of the market, especially so when it is stated that certain producers are using heavy sales pressure.

There is still a proportionately heavy demand for inferior qualities with signs that these yarns are not as plentiful as heretofore. A few buyers reported that they are unable to obtain the types they have been accustomed to using. From these statements it is probable that stocks have been liquidated somewhat which will enable the yarn market to respond more quickly when buying commences.

Knitting End Best

The knitting end remains the most active due to the active call for various specialties, including polo shirts. Weaving interest picked up slightly as fabric customers became interested early in the current week. Little of this was translated into orders, but producers felt that it was a healthy sign.

◆Upturn Expected in Rayon Waste

RAYON waste markets remain lacking in activity, but sellers have the growing belief that the worst has been seen. No pick-up in mill activity has been noted, but inventories have been completed and there are indications that fall lines are receiving more favorable reception. With this the case, it is probable that by mid-summer, manufacturers will be more interested in waste materials.

Prices are nominal and quotably unchanged. Conditions at this end are spotty and irregular, with rumors of price shading from time to time. This is a usual state of affairs in a slow market and is not expected to have any far-reaching consequences.

The amount of rayon decoration in fall piece goods lines is a favorable indication.

◆Noil Position Dull but Firm

Boston.

DEMAND for noils is showing no particular expansion, but there is some spotty mill buying of most grades at fairly strong prices. While noil sellers seem unable to advance values, mill buyers, on the other hand, are equally ineffective in securing concessions. The market must be considered a stable proposition at this time. If the mill demand were to sink to smaller dimensions, it would probably have no effect in forcing a further decline in values of good noils; on the other hand, if and when mill consumption becomes more active, the most likely supposition is that noils will move into a better selling position.

The general demand for scoured and pulled wools for woolen manufacture continues sluggish, but a little better interest is seen in 8-months Texas wool around 68c. for good quality. This type of wool is generally considered a competitor with fine noils for certain types of manufacture, and at the present time a good, fine domestic noil can be bought about 3c. per lb. below the price of short Texas wool.

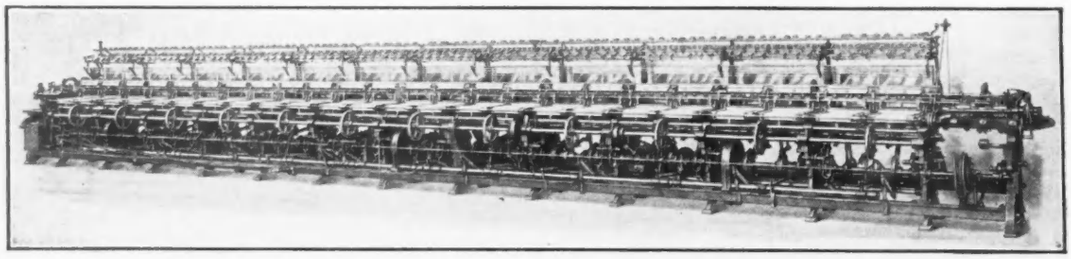
It is a waiting market, with the situation well in hand. Stocks are not oppressive, and prices are firm. The output is perhaps a little larger than the outlet, and while small consignments of noils are arriving under the higher tariff, there is no reason to expect any outbreak of foreign purchasing for some time to come. Since the new tariff went into effect, imports into Boston have comprised about 80 bales of wool noils, 10 bales of camelhair noils, and one bale of cashmere noils.

◆Wool Substitutes Grounding on Boston

Boston.

THE general substitute market shows little change from a week ago. Quotations on reworked wools, though they have not been revised downward, are considered nominal, and would, no doubt, be shaded if and when business appeared. The old-rag market is listless and lacking of confidence, nor is the situation any better in the clip market. In absence of the appearance of expected mill demand little if anything can be done to bring about a bigger and better market. The belief that the worst is over is gaining ground. Wool manufacturing is on a sounder basis than it was at the beginning of the year. A great deal of uncertainty has disappeared from manufacturing circles, and during the past three months a stabilization of values has been going on, not only in the wool market, but in several of its submarkets.

The old-rag market has been beaten



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down into a very low, strong position. Any further declines are likely to be incidental, brought about by necessity for liquidation. It cannot be said that there is any downward trend to rags at this time, and as they are firming up in spite of the lowest demand for many months, favored by a high protective tariff, even moderate buying by mills in the weeks to come will result in an improved market.

Sales have been made in standard rags during the last few days at the lowest prices of the year, light hoods sold at 14c., free of silk, and fine light merinos at 13c., free of blacks and whites. White knits have actually sold at 28c.

Reports from Dewsbury state that the new American tariff has brought to an end all business in rags for American account.

An examination of the paragraph in the new tariff covering wool wastes discloses the fact that, while the duty of fine thread wastes is 25c., this material can be garnetted in the foreign market and brought in on a duty of 26c. per lb. This is no sort of protection to the domestic garnetting industry, and must be considered a "joker" in the waste tariff. Bradford houses are fully aware of the advantage given them in the new tariff as related to garnetted materials, and may be expected to specialize more in their attempts to do business with Boston on garnetted rather than on ungarnetted materials.

◆Cotton Waste Dull Though Low Priced

BOSTON.

THE cotton waste outlook is not particularly promising at the moment, and is unlikely to change much for the better during the next few weeks. The instability of cotton is a strong deterrent to any buying ahead of spinnable wastes by manufacturers, even though they are reasonably sure that they will require such materials, and equally sure that they can be purchased at this time at low prices. Curtailment in the cotton industry and failure of the woolen branch of manufacturing to register any substantial comeback together constitute an effective factor in preventing any expansion in the demand for spinnable wastes. The market is very sluggish and unsatisfactory; sales are small and at low prices.

No Immediate Confidence

In any normal market, when cotton falls in price, percentages on spinnable materials rise, but this does not seem to be the case at this time. All classes of waste are on the low level of the year. There is little confidence as to the immediate future, but more regarding the early fall, when many of the disturbing influences will have run their course.

Low prices are mentioned on all sorts and types, but it often happens during a period of unsettlement that the low quotations apply almost entirely to materials that in some way or another are off-grade. Some dealers state confidently that choice wastes bring firm prices.

Comber has not been very active during the week. Stocks are not plentiful and the chief source of this material, New Bedford, is still following a sharp policy of curtailment. Comber has nevertheless sold at 11c., with Sak. and Egyptian 1c. per lb. lower. The largest business in the market continues in strips, especially peeler strips, which are quoted at 9½ to 10½c., according to grade. Bedding wastes are more active than they were, mattress manufacturers picking up good sized quantities of fly and picker within a range of 4 to 5c. White threads for machining are quoted 8 to 9½c. and colored threads, 7 to 7½c.

Kapoc Imports

Imports have shown a marked falling off for year to date, and this covers not only cotton waste but kapoc which is usually a rather constant arrival from Sourabaya and Semerang. Imports of kapoc into the United States for the first four months of this year show a decrease of 736 tons in quantity and $3 per ton in average price from 1929. The average price of the import has been about 18c. per pound. At this time prime Japara is quoted 20½ to 21c. The table herewith shows the January-April import for the the years named:

	1929	1930
Amount in tons	3,390	2,654
Price per ton	$362	$359

Cotton Market Is Irregular

Statistics and Trade Advices Against Prices

THE uncertainty of weather and further crop developments have been reflected by irregularity in the cotton market here during the past week. After selling up from 12.56, the low price touched right after the publication of the Government acreage report on July 8, to 13.04 for that position on the reports of hot, dry weather in the South, the market eased on the appearance of showers and moderating temperatures to 12.53 for the new October, or into new low ground for the season on that position. October sold off to 12.53 on Monday, or into new low ground for the season, but once more the market's approach to the 12½c. level seemed to bring in some trade buying as well as covering. The buying failed to follow up advances, however, and the market was quiet later, with traders evidently inclined to wait for further weather and crop developments.

Drouth Is Relieved

Drouthy conditions in the eastern belt, would appear to have been quite thoroughly relieved during the week. Rains have been reported in nearly all stations in this section—in some cases merely showers, while in others fairly good rains. This weather has been accompanied by a drop in temperatures more or less generally over the South. There have been showers also at a number of points in the central belt and at a few points in the West. At this writing, however, western and central belt sections generally need good gentle rains, and, while the eastern belt has probably had sufficient moisture for the time being, at least, some think additional rains will be needed for the best development of the crop before the end of this month. On the whole, southern advices indicate quite a spotted situation, with good crops in some places and poor crops in others; and there seems to be more than the ordinary difference between early and late cotton this season.

As yet, there has been no particular crystallization of sentiment as to the probable showing of the end-July condition reports. The Government report which gives the condition as of Aug. 1 is scheduled for publication on Aug. 8. It will be preceded by a number of private reports, but these are still a couple of weeks away, and meanwhile the crop may take on an entirely changed aspect. The general belief is that at present it is doing fairly well. Drouthy conditions in the central and western belts are not supposed to be sufficiently acute to justify a crop scare; and, as some of the local traders express it, crops advices may promote covering, but they have not yet become decidedly bullish enough to stimulate general or aggressive buying.

Surplus Emphasized

Meanwhile each fresh statistical statement to make its appearance tends to emphasize the surplus from the present crop. It is now quite generally expected that the world's end-season carry-over will be in the neighborhood of 6,000,000 bales, representing an increase of approximately 1,600,000 bales as compared with that of the previous season. Nor do day-to-day trade advices suggest any immediate improvement in the rate of consumption. The census report on domestic consumption for the month of June placed it at only 405,181 bales, against 569,414 last year, making consumption for the 11 months of 5,735,087 bales of lint cotton of all growths. This is in line, apparently, with estimates placing the world's consumption for this season, at between

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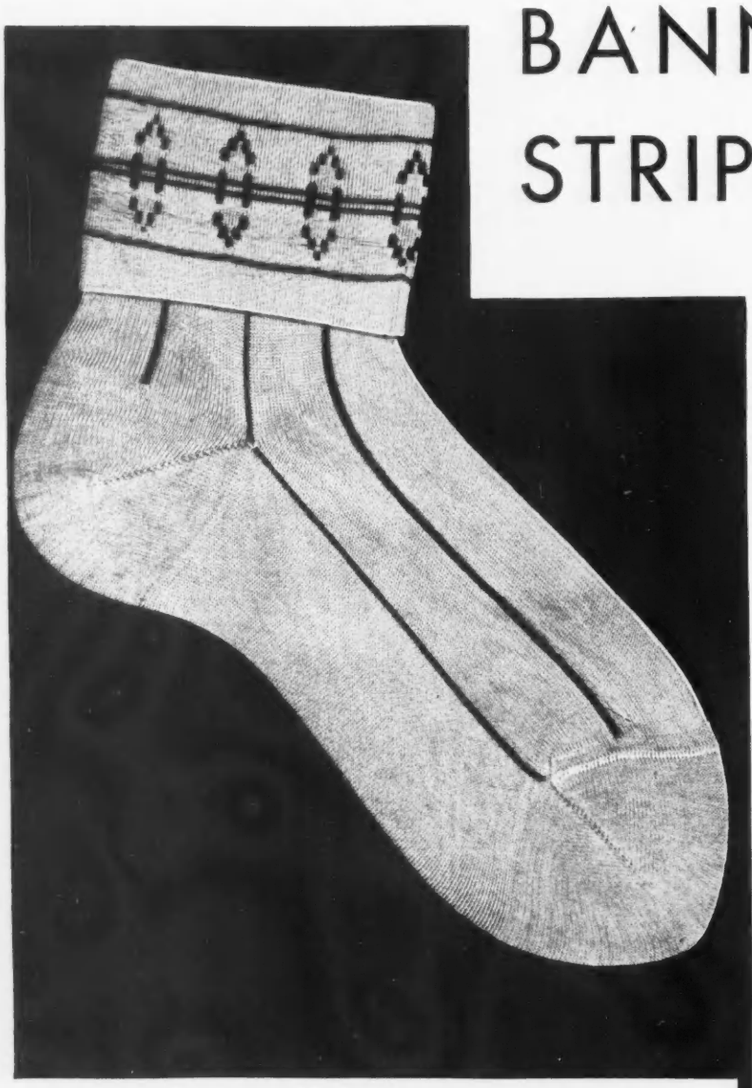

Child's anklet made of silk plated over rayon, two colors in the wrap stripes with the raised effect of hand embroidery; additional color in horizontal stripe in cuff, knit under wrap stripe ornamentation.

WHETHER the machine has started the style or whether the style has built a demand for the machine, the fact remains that all Banner Wrap Stripe Machines on misses', children's and infants' anklets are running full time. With 8 color feeds and the Banner horizontal striper this machine is the finest producer of high-grade anklets obtainable. Supplied with 3-inch, 3¼-inch, 3½-inch cylinders and as fine as 25 needles per inch, for silk, rayon or plated combinations . . . Reasonably prompt deliveries.

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There can be little question, however, that this season's results have reflected abnormal depression during the second half of the period, and, after six months of general depression, a turn for the better might reasonably be expected. It is quite possible, indeed, that indications of improving trade will develop during the early autumn, and it is not impossible that the advance of the season may bring with it reduced ideas of the probable crop. At present, however, bearish sentiment remains much in evidence with the opinion expressed in some quarters here that prices will have to go low enough to attract speculative buying for either investment or trade account. A few additional July notices are being issued here from day to day without any particular effect on the market and there has been no fresh development with reference to the attitude of the Federal Farm Board or the cooperative toward the cotton market.

●

BOSTON.—Although extra-staple cotton was firmer during the week, prices were irregular and general demand was small. Limited odd lot buying was the chief activity even though mill stocks are said to be at a very low point. During the week old-crop quotations were about ½c. lower and new crop quotations 1/16c. lower. Spinners confine their purchases almost entirely to pressing needs. Some inquiry has developed for the better grades of ⅞ in. to 1 1/16 in., but business is small for the reason that offerings in these descriptions are scarce. The bulk of current transactions is in the lower grades and off-colors. In the majority of instances these have changed hands at declining prices, for the reason that buyers have operated only when able to secure bargain terms.

Interest of both domestic and foreign spinners in deferred shipments of new-crop cotton so far has failed to produce much actual business. Spinners, influenced by continued depression, are offering lower terms than usual. Merchants on the other hand, being uncertain regarding the basis that will obtain this fall and winter, are showing a disposition to hold out for better terms. Little change is noted in basis. The average declines in official quotations covering middling ⅞ in. is 40 points on the week, against a loss of 59 points on July and 36 points on October. Basis has strengthened where transactions were made on July, and has weakened slightly where transactions were based on October.

Some inquiry for short cotton is reported from tire-yarn people, and there is some demand for cotton ranging from 1⅛ in. and down. Quotations for middling 1⅛ in. are rather firm around 200 to 250 on new December. The next shorter type, 1 3/32 in. can be had around 175 on, but middling inch cotton is available at 150 on and in not a few instances can be had as low as 125 on new December. Foreign cottons have not been particularly active, but occasional calls for medium grade Egyptian Uppers are reported with prices of spots quoted around 21½c. to 22c., while shipment cotton is at least 24c. or 25c. Medium grade Sak. in small lots on the spot can be had still around 28 to 29c.

●

MEMPHIS, TENN., July 14.—Failure of this section of the cotton belt to get relief from heat and drought is making shippers more cautious and consequently more afraid of the basis, while mill ideas as to basis are low. There is a fair amount of inquiry for new-crop delivery but it is getting nowhere. Inquiry for cotton for export is almost nil; domestic inquiry centers on small lots, mostly inch to 1 1/16 in., strict low middling to strict middling, the supply of which, in first hands, is extremely limited; merchant stocks must be relied on, as a rule, to fill such orders, and even then combing of the market is necessary.

Inquiry for premium staples is extremely limited, although a few small orders for filling-in purposes are being booked; quotations are about unchanged from the previous week. Strict middling 1⅛ in. staples are officially quoted at 225 on the new style October contract; 1 3/16 in. at 350 on, and 1¼ in. at 850 on.

Merchants express themselves as greatly disappointed at the small amount of forward business put through up to now, but say that, with mills trying to buy at very low basis and with merchants feeling that it would be most unwise to enter upon commitments except on very high basis, little else could be expected. Sales here during the week were only 3,144 bales against 5,861 bales last year but represented approximately half of the total sales reported by the 10 designated markets.

PROPOSE FUTURES TRADING

There is a movement on foot to institute futures trading in staples on the Memphis Cotton Exchange, with middling 1⅛ in. staples the basis of the contract, and nothing tenderable below 1 1/16 to 1 3/32 in. A committee has submitted tentative plans. Sentiment, in the main, is favorable. At present there is no adequate hedge for staples, and it is felt that establishment of a trading ring here would meet a definite need.

The weather during the week was hot and dry over most of the belt. Temperatures were mostly near seasonal normal in Texas but high records, for all time, were broken in many central sections. The official reading at Memphis, maximum, was 106, two degrees above the previous high in the 59 years since the weather bureau was established; private thermometers recorded 110 and above. The central belt has had practically no rainfall since about May 18. Late cotton, of which there is more than ordinarily, continues at a standstill, and is very small. Early cotton is making fair growth, and is fruiting freely. Copious rains would be beneficial over the entire belt.

Merinos in Firm Position

Similar Foreign Duty Paid, About 15c. Higher Than Domestic

BOSTON.

THE general wool situation shows practically no change from a week ago, prices on all qualities holding quite firm. Some dealers are sold ahead in both fleece and territory wools. Topmakers and mills show chief interest in the finer qualities of French combing and original wools; staple fine wools are still relatively neglected. The general price range is from 70 to 75c., the latter price being asked for Texas 12-months and Montana and similar staple. Texas 8-months is in moderate demand around 68c., but ranging from 65c. for less desirable lots up to 70c. for choice materials. Quotations on Ohio and similar fleece wools are unchanged for the month; the delaine is 30 to 31c. and other grades are 29 to 30c.

The wool market has been forced by adverse influences covering many months into a very firm and stable situation. A foundation has been laid upon which the top, yarn, and cloth industries can go ahead with business with little fear of further disturbing declines in raw material. During the past three months the average wool price on Summer St. has been practically unchanged. There has been a thorough deflation in wool manufacturing activities, and it seems quite incredible that curtailment of operations in the worsted and woolen branches of the industry can proceed further without producing a dangerous vacuum.

HOW CHEAP IS WOOL?

What has been said in recent weeks about the cheapness of domestic wool in the American market depends upon the angle of viewpoint. Wools outside the United States come pretty close at times to pre-war prices and occasionally sink below, but the American wool grower, with a larger American consumption before him that he cannot possibly fill, and protected by the highest

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tariff ever enacted, is able to maintain values on his product well above pre-war times. Illustrating this point, Australian 64s, selling in Boston, July, 1914, at 69c., are now quoted in bond at 55c., or 14c. below the pre-war value. Fine domestic staple selling in July, 1914, at 64c. is now quoted at 75c., a gain over the pre-war price of 11c. If the duty of 34c. is added to the Australian 64s in bond, it gives a price of 89c., which indicates that similar domestic wool is available to domestic manufacturers at 14c. per lb. below similar foreign staple.

Some wool factors seem to be under the impression that the foreign wool markets will have to drop 20 to 40% before such wools would reach Boston parity and become an importing menace. What this statement implies is that Australian merinos, for example, would have to slump to a point where they would sell at 34c. per clean content pound below similar domestic fine wools, before any importing of consequence could occur. This view of the situation seems unrelated to practical considerations; first, because Australian merinos are already so close to cost of production that any further marked decline would spell ruin to the Australian wool growing industry; second, because the United States, in spite of increased clips in recent years, cannot possibly, under prevailing agricultural conditions, produce enough wool to meet its own consumption; third, because any temporary shortage of foreign spot merinos would have the natural tendency to bring about a higher market for domestic wool, and the higher the market for domestic wool the greater the probability of increased imports of similar foreign wools.

Distribution Prospects

Reports differ materially as to the amount of wool secured by the National Wool Marketing Corp. but the most optimistic estimates do not exceed 40% of the 1930 clip. This leaves a huge quantity of wool to be handled by the independent trade. The national pool has secured at least the amount of wool it required for its original objective, and the problem for the next six months will run along the line of distribution.

Imports of wool from Argentina into the United States for season to date total 31,100 bales, as compared with 34,000 bales in the previous season, a decrease of 3,900 bales. For season to date Montevideo has shipped to the United States 13,900 bales, as compared with 20,700 bales in the similar period of last year, a decrease of 6,800 bales. England has been the largest buyer in South America, and Germany second.

Raw Silk Takes an Upturn

New York Exchange Follows Japanese Advance

SHORT covering on the Japanese exchanges brought about a sharp rise in raw silk prices at the beginning of the current week. A similar condition developed on the National Raw Silk Exchange and at mid-week all months showed substantial advances.

A Technical Correction

To a certain extent this was a technical correction of the market due to the large short interest which had been built up over the last 60 days or more. Opinions in the trade were divided, but numerous factors stated they believed that the rally was more than a strictly technical move. Raws had reached a point both here and abroad where bear interests felt that they could not be hammered any lower and it was time to collect profits. While it is possible, they said, for silk to react and ease off, it is highly improbable that it will go below the recent lows. These are believed to be resistance points that will mark the extent of any nearby decline.

Wide Spot Market

In the spot market, list prices varied considerably. A few held the higher grades unchanged and increased lower grades 5 to 10c. per lb. The general inclination was to raise prices this amount over the entire list. Dealers were naturally anxious to increase asking prices, but not at the expense of actual business.

A stronger market has diverted attention somewhat from the question of curtailment, but it remains a pressing question. No new or practical ideas have been advanced. Various steps, more or less radical in character, have been proposed, but the consensus of opinion is that the banks will have the last say in the matter of advancing money to reelers.

◆Pick Up Indicated In Heavy Sweaters

IN A FEW sections of the country, adverse weather since the first part of July has retarded bathing-suit sales. The falling off has been noticed mostly in the East; other sections of the country keeping up a good demand. This is one of the first signs that the season is coming to a close. It has been highly successful for the majority of knitters, and the larger producers still have enough business on hand to keep up deliveries for several weeks.

There has been some indication of activity in heavyweight sweaters. This has not been pronounced, but dealers expect demand to grow during this month and next. Producers are hopeful regarding future business and point out that mills have consistently refused to produce for stock in anticipation of demand. No one will prophesy when volume will commence, but there are those who firmly believe that after a certain point mills will have all the business they can handle for the rest of the season. The pick-up is expected to be gradual to a certain point, and then a rush of buying will cause a great many disappointments to customers in the matter of deliveries.

Berets have formed an important part of recent business and manufacturers expect this to be a large item while they remain a style highlight. Exactly how long berets will be favored by fashion is of course unknown, but it is believed that they will be important for at least another year.

◆Hosiery Sales More Promising

HOSIERY markets have taken a slight turn for the better and sellers stated that last week was the best in some time. Conditions are far from booming, but consumers are considerably more interested and talk of resuming normal purchasing before long. The pick-up was general and no particular line came to the foreground.

Orders Are Still Small

Orders are small and mainly for nearby delivery, however, the aggregate was better by comparison than for the last few weeks. Buyers were less inclined to haggle and dealers were able to get close to asking prices. The flood of price goods that has depressed the market level for many weeks is less apparent in the high and medium price ranges.

Low priced lines are not entirely clear of this burden, but the situation shows improvement. The mill position is better according to factors, although they added that stocks of certain full-fashioned lines were still heavy. Until these are cleared out, they expect that price cutting will crop out from time to time.

Start on Infants' Socks

Prices were named on infants' socks and anklets for spring 1931. In the main, quotations are unchanged although certain numbers are slightly lower. A few chain stores and the larger wholesalers were reported to have placed initial orders of good size. No important changes were noted at the style end. Rayon plated goods were outstanding, but all-rayon numbers were few in number. Fancy tops were prev-

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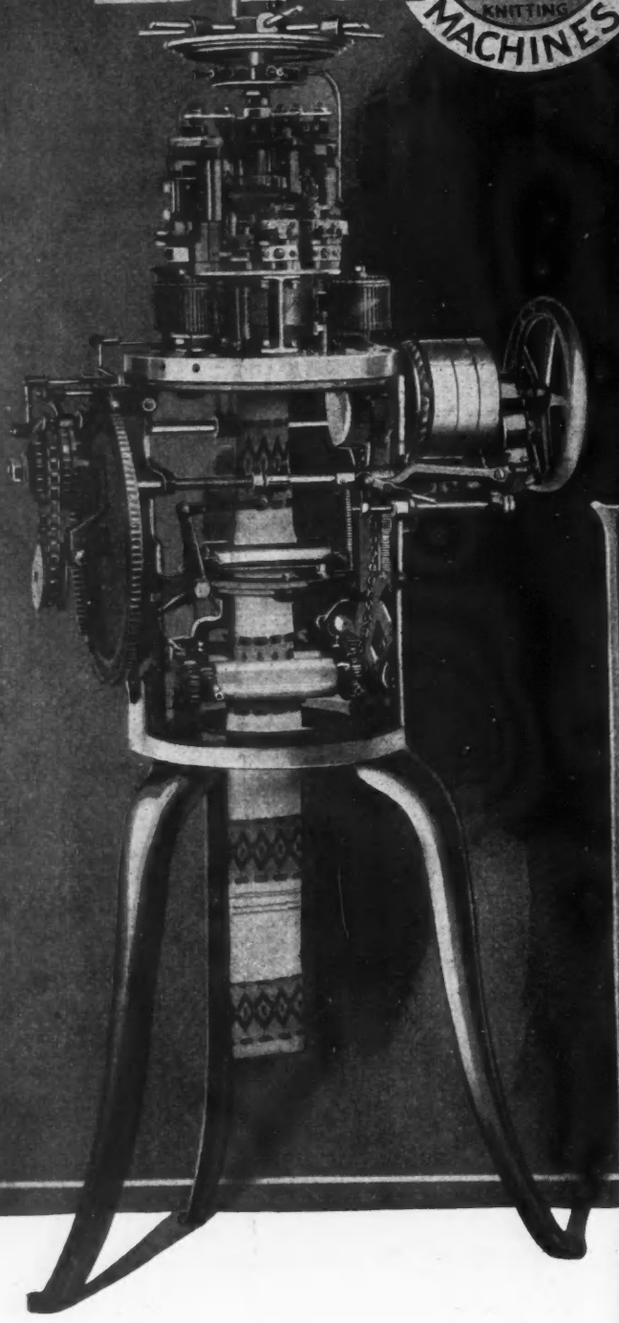

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China and Japan: Elbrook, Inc., 50 Peking Road, Shanghai, China

alent in numerous lines, as were horizontal stripes which are expected to repeat their success of this year.

◆No New Underwear Developments

UNDERWEAR producers stated that there was little in the way of new developments in the market. Several were getting ready to name spring 1931 prices on lightweight lines, but are holding off for the time being. The majority of makers are expected to name new prices in August, although some striving to hold off until September, which they believe would be a more opportune month.

There has been the usual crop of reports, probably true, to the effect that several producers are offering price concessions for nearby and early fall orders. The lightweight call has been fair so far this year, but a late start brought the level a good deal below last year's figures. Demand continues to be centered on athletic shirts and shorts, mostly small orders for spot delivery, with the totals aggregating a fair amount. With these garments becoming increasingly important as a year-round proposition, sellers believe that warm weather through August will enable sales to catch up to the records of last year.

Any improvement in lightweights has not been reflected in heavyweight lines. Here too, there are reports of price concessions in the hope of spurring demand, but business continues at a low point. Although lightweight underwear has cut seriously into the heavier lines, dealers point out that the latter are still an important part of the underwear business. For this reason they would not be surprised to see a rush of buying in late August with the usual results of delayed shipments and overselling.

◆Print Cloths Lead Cotton Goods

PRINT cloths furnish practically the entire interest in the cotton cloth market this week. As a class, these goods have made a remarkable comeback from the low prices of a few weeks ago, and the prominent numbers are holding firm at higher figures. A fair amount of interest was noted the forepart of the current week, although transactions were less than during the closing days of last week.

See Potential Buying Power

The fact that the few secondhand offerings at concessions were quickly bought up, is taken as an indication that a potentially large buying power exists in the offing. First hands held firm; the majority at 5½c. for 64x60s, 5.35 yd. The 5⅝c. level was reached on a few transactions, although some sellers told of passing up large-size bids at the same figure.

To some extent this firmness is reflected in carded broadcloths, although activity here is considerably less than in print cloths. Other lines of staple gray goods are inactive.

Comment on Denim Prices

Favorable comment was heard regarding the new denim prices. There was the expectation that the low prices would increase consumption and give the market a degree of confidence that has been lacking for some time. From the mill angle, current prices are "not so hot" and in all probability represent a loss. Mill men were resigned to this action, however, as the only means of keeping plants operating. A slightly discordant note was apparent in the report that one of the standard makes had been priced at fractionally under the rest of the market. In itself the difference is relatively unimportant, but this movement might conceivably take a serious turn.

Slight Broadsilk Stimulus

Raw Silk Strength Gives Improved Tone

JUST when broadsilk demand had slid off to a very low ebb, increased strength in raw silk injected some necessary confidence into the goods market. A certain amount of forward buying by the cutters as well as a revival of interest among the retail trade was reported. A good deal of the activity was confined to inquiries rather than orders, but mills found it to be an encouraging sign.

While current conditions are depressing, the morale of the selling group does not seem to be seriously impaired. They speak confidently of the fall, and feel sure that buying for the coming season will pick up shortly. Dress manufacturers have practically no new goods on hand and will soon be forced to cover a certain quantity of new season goods if they expect to meet even a subnormal demand.

Dyers Active

Certain silk dyeing establishments are reported to be running at full capacity. These plants are thought to be dyeing up gray goods that have been held in storage by manufacturers and converters for the last two months. Practically none of this consists of new business.

Many of the holiday items, such as scarfs, have been very backward. Dealers in this type of material do not look for any volume purchasing until October or November. At that time they are fearful of being confronted with the problem of filling immediate deliveries for the Christmas trade with scant stocks to draw upon.

◆Wool Goods In Seasonal Lull

LACK of consumer interest makes it probable that lines of men's wear summer cloths will not open for another week. So far there has been only one line formally opened to the trade. A certain amount of early business has been done by manufacturers of tropicals and like cloths, but it is felt that a delay in opening would be beneficial.

Business in men's wear lines has fallen off since a month ago and the market is now in a seasonal lull. A small amount of spring business was placed last week, but it was stated to be inconsequential. Overcoating orders have not picked up in volume, but the yardage seems to have been spread over a greater number of mills. Chinchillas and pile fabrics are selling in a small way to the girls' and misses' trades, but this has not passed the sampling stage according to reports.

The boys' clothing manufacturers are showing no interest due to the lack of retail buying coupled with the desire to work off stocks of clothing on hand.

In the women's wear end, wool crepes and crepe broadcloths have shown a better movement in the last few days. Manufacturers have been in the market for quick goods so that they could have garments ready for late summer and early fall sales. The long range outlook for mills is somewhat uncertain. As mentioned, the bulk of this current business has been for nearby delivery and mills are lacking orders that would carry them through the early fall.

Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended July 12, based upon data compiled by the Market News Service of Bureau of Agricultural Economics, Department of Agriculture, are as follows:

Domestic	18,798,000	124,898,000	95,200,000
Foreign	1,720,000	44,236,000	71,802,000
Total	20,518,000	169,134,000	167,002,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,720,000	44,236,000	71,802,000
Philadelphia	434,000	30,091,000	47,343,000
*New York	.....	26,897,000	44,406,000
Total	2,154,000	101,224,000	163,551,000

* New York has failed to report for past 3 weeks.

QUOTATIONS

at close of business, July 16, 1930
Prices cover average qualities unless otherwise stated

Cotton Goods

	July 16	July 9	July 17 1929
PRINT CLOTHS			
27 -in., 64x60, 7.60	4½c.	4 -4½c.	5c.
38½-in., 64x60, 5.35	5⅝-5½c.	5⅝-5½c.	7½c.
39 -in., 68x72, 4.75	6⅛-6½c.	6½c.	8½c.
39 -in., 72x76, 4.25	7½c.	7½c.	9½c.
39 -in., 80x80, 4.00	7½c.	7¾-8 c.	10 c.
BROWN SHEETING			
36-in., 56x60, 4.00	7 c.	7 c.	8⅛-8½c.
36-in., 48x48, 3.00	8⅛-8⅜c.	8¼-8½c.	10 c.
37-in., 48x48, 4.00	6½c.	6¼-6⅝c.	7½-7⅝c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	6½-6⅝c.	6½-6⅝c.	8⅜-8½c.
36½-in., 64x60, 5.75	5¼-5⅜c.	5½-5⅝c.	7⅛c.
MISCELLANEOUS			
Drills, 37-in., 3 yd.	8½c.	8½c.	10¼-10½c.
Denims, 2.20	12½c.	12½c.	17c.
Tickings, 8 oz.	17½-17¾c.	18-19½c.	22-23½c.
Standard prints	8 c.	8 c.	9 c.
Eastern staple ginghams, 27-in.	10c.	10c.	10½c.

Cotton Waste

Peeler comber	11 —11¼
Peeler strips	10 —10½
Sak. comber	10½—11
Choice willowed fly	5 — 6
Choice willowed picker	4 — 5
Sak. strips	13 — 14
Linters (mill run)	3 — 3½
White spooler (single)	8 — 9

Cotton Yarn

(Carded yarn quotations are nominal)

CARDED (Average Quality)
Double carded 2c.-4c. higher, according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.22½	20s	$0.24½-.25
10s	-.23	24s	.27
12s	-.23½	26s	.28 -.29
14s	-.24	30s	.29½-.30
16s	24-.24½	40s ex. qual.	.43 -.44

TWO-PLY SKEINS AND TUBES

8s-2	$0.23	26s-2	$0.28½
10s-2	-.23½	30s-2	-.30
12s-2	-.24	36s-2	.36 -.37
14s-2	-.24½	40s-2	.38 -.38½
16s-2	.24½-.25	40s-2 hi b k	.41 -.43
20s-2	-.25	50s-2	-.47
24s-2	-.27½	60s-2	-.55

SINGLE WARP

10s	$0.23	24s	$0.27
12s	-.23½	26s	-.28
14s	.23½-.24	30s	.30½-.31
16s	.24 -.24½	40s ex. qual.	.44 -.45
20s	.25 -.25½		

TWO-PLY WARPS

8s-2	$0.23 -.23½	24s-2	$0.28
10s-2	.23½-.24	26s-2	-.29
12s-2	.24 -.24½	30s-2	.30 -.31
14s-2	.24½-.25	40s-2 ordin.	.38 -.39
16s-2	-.25	50s-2	.47 -.48
20s-2	.25 -.25½	60s-2	.55 -.56

8s-3 and 4-ply skeins and tubes; tinged, 19-20; white, 22-23 ; waste 17½-18½

HOSIERY CONES (Frame Spun)

8s	$0.23	22s	$0.26½-.27
10s	.23 -.23½	24s	.27½-.28
12s	.23½-.24	26s	.28½-.29
14s	.24 -.24½	30s tying	-.30½
16s	.24½-.25	30s reg	.31½-.32
18s	.25 -.25½	30s ex. qual.	.34 -.34½
20s	.25½-.26	40s	.38 -.39

COMBED PEELER—(Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.40 -.41	60s-2	$0.59 -.60
30s-2	.44 -.45	70s-2	.69 -.70
36s-2	.45 -.46	80s-2	-.81
40s-2	.46 -.47	90s-2	.95 -1.00
50s-2	.52 -.53	100s-2	1.18 -1.20

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.41 -.42	60s-2	$0.60 -.61
30s-2	.45 -.46	70s-2	.70 -.71
36s-2	.46 -.47	80s-2	-.82
40s-2	.47 -.48	90s-2	1.00 -1.05
50s-2	.53 -.54	100s-2	1.20 -1.25

SINGLES

12s	$0.34½	30s	$0.44
14s	-.35	38s	.46 -.47
16s	-.35½	40s	.47½-.48
18s	-.36	50s	-.52
20s	-.37	60s	-.60
24s	-.39½	70s	-.70
28s	-.42½	80s	.81 -.82

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.55 -.56	90s-2	$1.35 -1.37
30s-2	.57 -.58	100s-2	1.65 -1.67
36s-2	.60 -.61	120s-2	2.05 -2.08
40s-2	.63 -.64	30s	-.75
45s-2	.65 -.67	40s	-.80
50s-2	.67 -.69	50s	-.85
60s-2	.76 -.78	60s	-.90
70s-2	.88 -.90	70s	-1.05
80s-2	1.00 -1.05	80s	-1.25

Cotton Prices and Statistics

COTTON STATISTICAL DATA
(Fluctuations of Futures)

	Closed July 10	For Week High	For Week Low	Closed July 16	Net Change
July	13.19	13.24	12.77	12.93	—.26
August	13.15	13.15	12.90	12.95	—.20
September	13.15	13.15	12.90	12.95	—.20
October	13.26	13.30	12.81	13.04	—.22
November	13.33	13.33	13.02	13.15	—.18
December	13.42	13.43	13.00	13.21	—.21
January	13.43	13.43	13.03	13.22	—.21
February	13.31	13.31	13.01	13.10	—.21
March	13.43	13.43	13.00	13.21	—.22
April	13.49	13.49	13.20	13.29	—.20
May	13.58	13.58	13.15	13.38	—.20

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Friday, July 11	13.10	12.60	7.73
Saturday, July 12	13.20	12.72	7.62
Monday, July 14	13.10	12.59	7.56
Tuesday, July 15	13.20	12.69	7.58
Wednesday, July 16	13.15	12.69	7.65
Thursday, July 17	13.15	12.78	7.64

SPOT FLUCTUATIONS AND STOCKS

Markets	July 9	July 16	Sales	Stocks This Week	Stocks Last Year
Galveston	12.70	12.60	674	190,005	97,909
New Orleans	12.40	12.69	1,572	365,323	92,442
Mobile	12.25	12.30	.....	10,857	13,468
Savannah	12.21	12.02	438	104,467	21,131
Norfolk	12.88	13.00	365	49,692	31,008
New York	13.20	13.15	200	237,496	156,917
Augusta	12.56	12.50	358	51,707	35,332
Memphis	12.05	12.00	3,518	162,618	57,196
St. Louis	12.00	11.90	.....	7,881	10,369
Houston	12.40	12.50	2,430	550,291	185,205
Dallas	12.15	12.15	237	10,784	2,722

BASIS MIDDLING

	Saturday, July 12	Saturday, July 5
10 markets average	12.39	12.61
Memphis	12.00	12.25

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Prices Nominal
1⅛-in.	14.75-15.05c.
1 3/16-in.	16.00-16.30c.
1¼-in.	21.00-21.30c.

CURRENT SALES

	For Week	Prev. Week	Week Before
Memphis total	3,144	2,002	1,888
F.o.b. included in total	2,864	1,202	1,615
10 markets	6,268	7,365	11,082

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts	1,433	1,605	2,068
Gross receipts	7,667	6,678	7,085
Total since Aug. 1, net	942,520	861,312	666,929
Shipments	19,773	17,885	13,961
Total since Aug. 1	1,858,859	1,826,535	1,472,962
Total stock	168,182	62,505	99,648
Decrease for week	12,106	10,540	5,983
Unsold stock in hands of Memphis factors	27,154	4,864	.....

AVERAGE PRICE JULY-AUG. SHIPMENT HARD WESTERN COTTON

	F. o. b. New England Middling	St. Middling
1 1/16 in.	15½-15⅝c.	15¾-16 c.
1⅛ in.	15½-16 c.	16¼-16¾c.
1 3/16 in.	17½-18 c.	18¼-19 c.
1¼ in.	21½-23 c.	23 -25 c.

Basis on New York. New December, 12.95

DIFFERENCES ON AND OFF MIDDLING
WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M. F.	1.05†	1.00†	1.00†	1.00†	1.00†
S. G. M.	.90†	.85†	.90†	.88†	.86†
G. M.	.75†	.75†	.75†	.75†	.72†
S. M.	.50†	.50†	.50†	.50†	.50†
S. L. M.	.75*	.65*	.65*	.75*	.71*
L. M.	1.75*	1.75*	1.50*	2.00*	1.73*
S. G. O.**	3.00*	2.75*	2.50*	3.25*	2.88*
G. O.	3.00*	2.75*	2.50*	3.25*	3.93*
YELLOW TINGED					
G. M.	.50*	.25*	.50*	.50*	.55*
S. M.	1.00*	.75*	1.00*	1.00*	1.05*
M.**	1.75*	1.25*	1.50*	1.50*	1.65*
S. L. M.	2.50*	1.75*	2.25*	2.25*	2.32*
L. M.**	3.50*	2.25*	3.00*	3.00*	3.22*
YELLOW STAINED					
G. M.	1.50*	1.75*	1.50*	1.50*	1.55*
S. M.**	2.25*	2.50*	2.50*	2.50*	2.40*
M.**	3.00*	3.00*	3.50*	3.50*	3.20
BLUE STAINED					
M. G.**	1.75*	1.50*	1.75*	1.75*	1.70*
S. M.**	2.25*	2.25*	2.75*	2.75*	2.45*
M.**	3.00*	2.75*	3.75*	3.75*	3.23*

**Grades not deliverable on contract. †On Middling
*Off Middling.

EGYPTIAN COTTON

Alexandria Exchange, July 16		Change
July Sak	28.00	.....
August uppers	16.18	+0.08

JULY-AUGUST SHIPMENT c. i. f. BOSTON

(Tariff not included)	(Prices Nominal)
Fully good fair Sak	30.50
Fully good fair to good Uppers	18.50

(By Anderson, Clayton & Co.)

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne.	$0.30 –$0.31	¾ blood	$0.29 –$0.30
Fine clthg.	.23 – .24	½ blood	.29 – .30
¼ blood	.29 – .30		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.73 –$0.75
California, Northern	.65 – .68

PULLED—EASTERN (CLEAN BASIS)

A-A	$0.75 –$0.78	B-Super	$0.57 –$0.60
A-Super	.63 – .68	C-Super	.53 – .55

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.75 –$0.78
Staple ½ bld.	.70 – .73
Fine and fine medium	.70 – .72
¾ blood	.60 – .63
½ blood	.55 – .58

MOHAIR—DOMESTIC

Best Carding	$0.38 –$0.40
Best combing	.53 – .55

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.28 –$0.30
Cape firsts	.28 – .30

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.65 –$0.70
64s	.53 – .55
58s-60s	.46 – .48
(IN GREASE)	
Montevideo:	
58-60s	$0.25 –$0.26
56s	.25 – .26
50s	.23 – .24
Buenos Aires:	
4s, 40-44s	$0.22 –$0.23
5s, 36-40s	.20 – .21

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo	$0.30 –$0.31
China: Combing No. 1	.17 – .19
China Filling Fleece	.16 – .17
Szechuen ass't.	.17 – .18
Cordova	.17 – .18
Scotch black face	.20 – .21
East India: Kandahar	.26 – .27
Vicanr	.28 – .30
Joria	.29 – .31

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s, 36s	$0.92½–$0.95
2-24s, 40s	1.02½– 1.05
2-26s, 44s	1.10 – 1.12½
2-28s, 46s	1.15 – 1.17½
2-30s, 48s	1.20 – 1.22½
2-32s, 50s	1.25 – 1.27½

(Single yarns 5c. less than above)

2-36s, 58s	$1.35 –$1.40
2-40s, 60s	1.45 – 1.4 ½
2-48s, 64s	1.50 – 1.52½
2-50s, 66s	1.70 – 1.75
2-60s, 70s	2.15 – 2.20

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.95
2-20s, 50s in oil	$1.05 – 1.07½
2-20s, 56s in oil	1.15 – 1.20
2-20s, 60s in oil	1.32½– 1.35
2-20s, 64s in oil	1.40 – 1.42½
1-15s, 46s dyed	1.15 – 1.17½
1-15s, 48s dyed	1.17½– 1.20
1-15s, 50s dyed	1.22½– 1.25

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	$1.20 –$1.22½
1-20s, 60s	1.25 – 1.27½
1-18s, 64s, Dyed	1.52½– 1.55
1-26s, 64s	1.2 ½– 1.30
1-30s, 60s, Warp	1.40 – 1.45
1-30s, 64s, Warp	1.45 – 1.50
2-30s, 64s, Fancy mixes	1.70 – 1.72½
2-40s, 64s, Zephyrs	1.62½– 1.65
1-50s, 66s	1.62½– 1.65
2-50s, 66s	1.80 – 1.82½
1-60s, 70s	2.05 – 2.07½
2-60s, 70s	2.20 – 2.25

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$1.05 –$1.07½
1-40s, 50-50-60s on cops	1.20 – 1.25
1-40s, 50-50-64s on cops	1.22½– 1.25
1-40s, 50-50-64s Australian cops	1.30 – 1.35

Underwear mixes, 3c. additional.
Solid color, 35c. additional.

◆

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.95 –$0.97
Half-blood (60-62s)	.91 – .93
High ¾ blood (58s)	.83 – 85
Aver. ¾ blood (56s)	.80 – .83
Low ¾ blood	.78 – .80
High ½ blood (50s)	.73 – .75
46s S. A. and N. Z.	.65 – .70
44s S. A and N. Z.	.65 – .68
40s S. A and N. Z.	.63 – .65

TOPS—BRADFORD, ENG. (JULY 10)

Fine (70s)	31 d	¾ bld. (56s)	21½d
Fine (64s)	27½d	½ bld. (50s)	17½d
¾ bld. (60s)	26 d	Cross-bred (46s)	15½d
¾ bld. low (58s)	23½d		

NOILS—BOSTON

Fine	$0.57–$0.60	High ½ bld.	$0.44–$0.47
Half-bld.	.53– .55	Low noils	.40– .42
Aver. ¾ bld.	.45– .48	Medium colored	.40– .42
Fine colored	.46– .48		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.83 –$0.88
Lap, fine colored	.58 – .63
Hard ends, fine white	.63 – .68
Hard ends, ¾ blood white	.45 – .48
Hard ends, fine colored	.30 – .33
Hard ends, medium colored	.23 – .28
Card, fine White	.35 – .38
Burr, fine Carbonizing	.38 – .43

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.06½–$0.07
Merinos, Fine Dark	.04½– .05
Merinos, Fine Light	.14 – .15
Serges, Blue	.08½– .09
Serges, Black	.08 – .09
Serges, Red	.11 – .11½
Knit, White	.29 – .30
Knit, Red	.16 – .17
Knit, Light Hoods	.15 – .16
Worsted, Light	.05½– .06
Worsted, Blue	.08½– .09
Worsted, Black	.08 – .09

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. grand XX in skeins	$4.30
Japan organzine, 2 thd. sp. crack in skeins	4.15
Japan crepe, 3 thd. grand XX in bobbins	4.40
Japan crepe, 3 thd. sp. crack on bobbins	4.10
Japan crepe, 4 thd. crack on bobbins	3.85
Canton crepe, 3 & 4 thd. ns. 14/16 on bobbins	2.70
Tussah tram, 2 end on cops	2.00
Hosiery tram, 3 thd. Japan XXX	4.90
Hosiery tram, 4 thd. Japan, selec. gd. XX	4.40
Hosiery tram, sp. crack XX	3.65
Hosiery tram, crack XX	3.55
Hosiery tram, XX	3.30

SPUN SILK YARNS—(Terms: net 30)

40/2	$3.65	60/2	$4.00
50/2	3.85	62/1	2.80

Raw Silk

(60 day basis)
Prices Nominal

Japan filature, grand XX, 13/15	$3.40
Japan filature, sp. crack XX, 13/15	3.25
Japan filature, crack XX, 13/15	3.10
Japan filature, XX, 13/15	2.90
Japan filature, best X, 13/15	2.80
Canton filature, new style, 14/16	1.60
Canton filature, new style, 20/22	1.45
Tussah filature, 8 cocoon	1.55
Grand XX (Yellow) 20/22	2.75
Grand XX (White) 20/22	2.85
Sp. crack (Yellow) 20/22	2.65
Sp. crack (White) 20/22	2.75
Crack (Yellow) 20/22	2.55
Crack (White) 20/22	2.65

NATIONAL RAW SILK EXCHANGE

	Close July 9	For the Week High	For the Week Low	Close July 15	Net Chge.
July	2.75	2.85	2.64	2.90	+.15
August	2.66	2.86	2.59	2.83	+.17
September	2.67	2.86	2.59	2.82	+.15
October	2.67	2.86	2.59	2.83	+.16
November	2.67	2.86	2.59	2.83	+.16
December	2.68	2.86	2.59	2.83	+.15
January	2.69	2.86	2.59	2.84	+.15
February	2.68	2.86	2.60	2.84	+.16

July 9 to July 15—Total contracts, 541. Total number of bales, 5,410. Total approximate value, $1,953,010.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.30	$2.00
75	18	1.85	1.65
75	30	1.95	1.75
100	18	1.45	1.35
100	40	1.50	1.40
125	18	1.45	1.25
125	36	1.30	1.20
150	24	1.15	1.10
150	32	1.15	1.10
150	36	1.20	1.15
150	60	1.35	1.30
150	75	1.50	.....
170	24–27	1.15	1.10
170	60	1.35	1.30
200	30	1.05	1.00
200	32	1.10	1.05
200	60	1.30	1.25
300	44	.95	.90
400	72	1.10	.95
450	54	1.00	.95
600	72–96	1.00	.95
900	100–144	1.00	.95

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
35	$3.50	$3.25	125	$1.30	$1.20
50	2.25	1.90	140	1.15	1.10
75	1.85	1.65	150	1.15	1.10
100	1.45	1.35	160	1.15	1.10
			175	1.15	1.05

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	25	$4.15	40	30	$3.15
25	25	3.65	52	30	3.00
30	25	3.40			

(Due to diversified offerings prices for higher denier are not listed.)

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.75	120	$1.90
55	2.55	150	1.60–1.85
75	2.25–2.70	200	1.55
100	2.00–2.45	300	1.50

Rayon Waste

Prices Nominal

Open bleached waste	–$0.18
Open unbleached waste	– .15
Bleached thread waste (mfs.)	– .12
Bleached thread waste (misc.)	.11– .12
Colored thread waste	.08– .10
Colored clips	– .07½

CONVERTED RAYON WASTE

Bleached tops	–$0.49
Unbleached tops	– .43
Bleached noils	– .18
Bleached garnets	– .18
Unbleached garnets	– .16
Colored garnets	– .14

Silk Waste

Kibizzo Kikai Grand XX	$0.85
Kibizzo Kikai Triple Extra	.92
Frison Grand Double	.90
Pierced Cocoons	1.12

TRIETHANOLAMINE is an odorless, rather viscous, hygroscopic liquid slightly yellow in color and boiling at 277-279° C at 150 mm. pressure. It possesses distinctive features of wide interest to the textile industry. • Triethanolamine forms soaps with the fatty acids of all common vegetable oils by merely mixing the acid and the base, no heat being required. These soaps are characterized by their

- 1. NEUTRALITY — pH about 8.6.
- 2. EASE OF PREPARATION.
- 3. HARMLESS ACTION UPON WOOL WORSTED AND SILK.
- 4. HIGH DETERGENCY.
- 5. STRONG EMULSIFYING ABILITY.
- 6. HARMLESS EFFECT UPON DYED STOCK.

Triethanolamine is the weakest alkali commercially available. Its alkalinity is about one-sixth that of ammonia, its pH 10.2. The low alkalinity is important in the more complete neutralization of oil acidity; for example, neutral or slightly alkaline oils for use in lubricating, soaking or knitting processes may be formulated by the simple addition of Triethanolamine or Triethanolamine soaps to the oil. Corrosion is thus eliminated and loosening of silk sericin is no longer encouraged. • When used for the fulling and scouring of wool or worsted piece goods, Triethanolamine oleate, because of its neutrality and softening properties, produces finishes not obtained with other soaps. • For further information, consult our technical division.

TRIETHANOLAMINE

CARBIDE AND CARBON CHEMICALS CORPORATION
Carbide and Carbon Building
Thirty East Forty-second Street, New York

Unit of Union Carbide and Carbon Corporation

PRODUCTS MANUFACTURED BY THE CARBIDE AND CARBON CHEMICALS CORPORATION

ACETONE	ETHYLENE CHLORHYDRIN
BUTYL CARBITOL★	ETHYLENE DICHLORIDE
BUTYL CELLOSOLVE★	ETHYLENE GLYCOL
CARBITOL★	ETHYLENE OXIDE
CELLOSOLVE★	ISOPROPANOL
CELLOSOLVE★ ACETATE	ISOPROPYL ETHER
DICHLOR ETHYL ETHER	METHYL CELLOSOLVE
DIETHYLENE GLYCOL	METHANOL
DIOXAN	TRIETHANOLAMINE
ETHYLENE GAS	VINYL CHLORIDE
VINYLITE★ RESINS	

★*Trade-mark Registered*

Southern Mill Securities

(A. M. Law & Co., Spartanburg)

	Bid	Asked
Abbeville Cotton Mills	..	60
Anderson Cotton Mills	69	73
Arcade Cotton Mills	..	60
Arcadia Mills	..	240
Arcadia Mills, pfd	97	100
Arkwright Mills	..	70
Augusta Factory, Ga	..	20
Avondale Mills, Ala	..	1025
Beaumont Mfg. Co	250	300
Beaumont Mfg. Co. 7% pfd	100	102
Belton Mills	..	25
Belton Mills, pfd	..	80
Bibb Mfg. Co	104	110
Bibb Mfg. Co. 6% pfd	99	102
Brandon Corp., A	..	49
Brandon Corp., B	..	7
Brandon Corp., pfd	80	85
Calhoun Mills	88	95
Chadwick-Hoskins Co. (par, $25)	10	12
Chesnee Mills	..	65
Chiquola Mfg. Co	250	260
Chiquola Mfg. Co., pfd	88	92
Clifton Mfg. Co	95	98
Clinton Cotton Mills	235	250
Columbus Mfg. Co., Ga	80	90
Cowpens Mills	..	30
D. E. Converse Co	90	95
Dallas Mfg. Co., Ala	..	65
Darlington Mfg. Co	40	50
Drayton Mills	110	..
Dunean Mills	120	125
Dunean Mills, pfd	100	102
Eagle & Phenix Mills, Ga	..	65
Easley Cotton Mills, pfd	45	50
Enterprise Mfg. Co., Ga	..	100
Fairforest Finishing Co., serial notes	98	100
Florence Mills	45	50
Florence Mills, pfd	98	102
Gaffney Mfg. Co	..	31
Gainesville Cotton Mills, Ga	145	155
Glenwood Mills	90	100
Gluck Mills	70	75
Gossett Mills	60	65
Graniteville Mfg. Co	..	100
Greenwood Cotton Mills	400	..
Grendel Mills, pfd. (par, $50)	45	48
Hamrick Mills	..	100
Hartsville Cotton Mills	130	140
Hunter Mfg. & Com. Co., pfd	85	90
Industrial Cotton Mills Co., pfd	..	30
Inman Mills	115	125
Inman Mills, pfd	100	..
Judson Mills, A, pfd	99	103
Judson Mills, B, pfd	95	98
King, John P. Mfg. Co., Ga	80	90
Lancaster Cotton Mills	250	270
Laurens Cotton Mills	..	120
Limestone Cotton Mills	..	100
Lydia Cotton Mills, serial notes	99	101
Marion Mfg. Co., N. C	..	113
Marlboro Mills	..	15
Mills Mill, pfd	95	99
Mollohon Mfg. Co., pfd	97	100
Monarch Mills	112	118
Musgrove Cotton Mills	30	35
Newberry Cotton Mills	105	111
Ninety-Six Mills	400	..
Norris Cotton Mills	..	45
Orr Cotton Mills	..	60
Orr Cotton Mills, pfd	80	85
Pacolet Mfg. Co	..	140
Pacolet Mfg. Co., pfd	97	100
Panola Cotton Mills, Class A, pfd. (par, $60)	57	60
Pickens Cotton Mills	105	115
Piedmont Mfg. Co	96	100
Piedmont Print Works (no par)	15	20
Piedmont Print Works, pfd	60	70
Poe, F. W. Mfg. Co	24	29
Riverside & Dan River Mills	11½	12½
Riverside & Dan River Mills, 6% pfd	73	78
Saxon Mills	..	70
Sibley Mfg. Co., Ga	50	60
Southern Bleachery	16	20
Southern Bleachery, Pfd	80	85
Southern Bleachery, serial notes	95	100
Southern Franklin Process	22	24
Southern Franklin Process, pfd	98	101
Southern Worsted Corp., pfd	88	92
Spartan Mills	140	150
Spencer Corp., serial notes	98	100
Union-Buffalo Mills	..	46
Union-Buffalo Mills, 1st pfd	87	90
Union-Buffalo Mills, 2nd pfd	45	47
Victor-Monaghan Co	68	70
Victor-Monaghan Co., pfd	112	117
Wallace Mfg. Co	..	105
Ware Shoals Mfg. Co	130	140
Whitney Mfg. Co	..	40
Woodside Cotton Mills Co	..	50
Woodside Cotton Mills Co., pfd	42	45
Yarns Corp. of America, gold bonds	99	101

Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended July 16:

	High	Low	Last Sale	Net Change
Adams Mills	27⅜	27	27	— ⅜
American Woolen	11½	8	9½	— 1⅝
American Woolen, pfd	30⅜	26	26	— 3
*Assoc. Rayon, pfd	52½	42⅞	52½	+ 9¼
Belding-Hemingway	4	4	4	.. ..
Cannon Mills	23	21½	22⅜	— ⅞
Century Ribbon	6½	5½	5½	+ ⅛
Collins & Aikman	22⅜	19½	21½	+ 2
Consolidated Textile	1	⅞	1	+ ⅛
Duplan Silk	15	15	15	+ ⅛
*Fabrics Finishing	3¼	3	3⅛	— ⅛
Gotham Hosiery	12	10¼	12	+ 1⅝
Industrial Rayon	95	90	94½	+ 4½
Kayser, Julius	26½	24⅞	25½	— ⅜
Mallinson	12¼	10⅜	11⅜	— ¼
Mohawk Carpet	19	18½	19	+ 1
Pacific Mills	22½	22½	22½	+ ½
Real Silk Hosiery	41	38¼	40⅜	+ 1⅜
*Tubize Chat B	8½	7½	8½	+ 1⅛
United Piece Dye Wks	26½	24½	26½	+ 3½

* Listed on Curb.

Fall River Mill Stocks

(G. M. Haffards & Co., Fall River)

	Bid	Asked
Algonquin Printing Co	320	335
American Linen Co	..	..
Barnard Mfg. Co	8	..
Berkshire (com.)	14	16
Berkshire (pfd.)	66	69
Bourne Mills	..	10
Border City Mfg. Co	..	5
Charlton Mills	..	65
Cornell Mills	..	10
Davol Mills	..	5
Davis Mills	..	12
Flint Mills	18	..
King Philip Mills	..	..
Laurel Lake Mills (com.)	..	10
Lincoln Mfg. Co	..	12
Luther Mfg. Co	..	..
Merchants Mfg. Co	27	..
Narragansett Mills	..	10
Parker Mills, com	..	..
Pepperell Mfg. Co	83	86
Pilgrim Mills	..	70
Richard Borden Mfg. Co	2	4
Sagamore Mfg. Co	..	68
Shove Mills	4	8
Stafford Mills	..	1
Stevens Mfg. Co	..	38
Union Cotton Mfg. Co	24	..
Wampanoag Mills	..	..
Weetamoe Mills	..	1

N. Carolina Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Ask
Acme Spinning Co	67	75
American Yarn and Processing Co	..	81
Chadwick-Hoskins Co. (Par. $25)	8	11
Chadwick-Hoskins Co., 8%, Pfd	98	101
China Grove Cotton Mills	100	107
Climax Spinning Co	60	68
Clover Mills	..	25
Converse D. E. Co	90	95
Crescent Spinning Co	54	62
Dixon Mills	90	100
Durham Hosiery, 6%, Pfd	41	50
Eagle Yarn Mills	59	66
Efird Mfg. Co	74	83
Erwin Cotton Mills	..	120
Erwin Cotton Mills Co., 6%, Pfd	90	97
Flint Mfg. Co	..	82
Flint Mfg. Co., 7%, Pfd	..	99
Globe Yarn Mills (N.C.)	..	20
Gray Mfg. Co	..	81
Hanes, P. H. Knitting Co	8	10½
Hanes, P. H. Knitting Co., 7%, Pfd	96	101
Henrietta Mills, 7%, Pfd	43	55
Imperial Yarn Mills	..	60
Linford Mills	60	75
Locke Cotton Mills Co	..	70
Majestic Mfg. Co	115	135
Mansfield Mills	..	75
Mooresville Cotton Mills	..	7
Mooresville Cotton Mills, 7%, Prior Pfd	..	85
Myers Mills	..	73
Myrtle Mills	..	51
National Yarn Mill	51	61
Perfection Spinning Co	59	70
Ranlo Mfg. Co	..	115
Ranlo Mfg. Co., 7%, Pfd	..	100
Roanoke Mills	62	..
Roanoke Mills, 1st Pfd., 7½%	90	96
Roanoke Mills, 2nd Pfd., 8%	90	96
Rosemary Mfg. Co., Pfd., 7½%	98	..
Rowan Cotton Mills Co	70	80
Seminole Cotton Mills Co	..	75
Sterling Spinning Co	60	78
Stowe Spinning Co	60	71
Victory Yarn Mills Co	38	50
Ware Shoals Mfg. Co., 7%, Pfd	..	99
Winget Yarn Mills Co	40	50
Wiscassett Mills Co	175	185

New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of leading Boston dealers.

	Public Sale	Bid	Asked
Am. Mfg. pfd	68	58	65
Amoskeag	12½	..	..
Arlington	23½	23	25
Associated Textile	36½	34	37
Bates	63	78	..
Berkshire Associates, com	15	15	17
Berkshire Associates, pfd	65	69	70
Bigelow-Sanford, com	61	..	..
Boott Mills	120½	110	115
Edwards	80¾	79	81
Esmond, pfd	102	100	102
Farr Alpaca	68	65	70
Hamilton Woolen	40	38	41
Hill	18	18	23
Indian Orchard	20½	20	25
Ludlow	138	136	138
Merrimack, com	50½	45	50
Nashua, com	32½	27	31
Nashua, pfd	77½	65	..
Naumkeag	88	83	88
Newmarket	25½	20	25
Otis	49½	44	47
Pacific	23	..	..
Pepperell	85¼	85	88
Plymouth Cordage	82	74	78
York	8¾	8	10

New Bedford Mill Stocks

(Sanford & Kelley, New Bedford)

	Bid	Asked
Acushnet Mill	14	16
Beacon Mfg., con	125	..
Beacon Mfg., pfd	85	87
Booth Mfg. Co., com	9	11
Booth Mfg. Co., pfd	30	..
Bristol Mfg. Co	27	29
City Mfg. Co	24	27
Dartmouth Mfg. Co., com	50	..
Dartmouth Mfg. Co., pfd	86	..
Fairhaven Mills, pfd	½	¾
Gosnold Mill., com	..	21
Gosnold Mill, pfd	52	55
Grinnell Mfg. Co	24	26½
Hathaway Mfg. Co	38	40
Holmes Mfg. Co., com	1	3
Holmes Mfg. Co., pfd	10	..
Kilburn Mill	36	38
Nashawena Mills	19½	21
N.B. Cotton Mills, pfd	12	17
Neild Mill	34	38
Nonquitt Mills	5	6
Pierce Mill	120	125
Potumska Mills	30	32
Quissett Mills, com	50	53
Soule Mill	55	57
Taber Mill	10	11½
Wamsutta Mills	13	14½
Whitman Mills	..	2½
Gosnold Mill Notes	87	..
Whitman Mills 6% Notes	38	..

* Ex-dividend.

Textile Calendar

Worsted Yarn Spinners' Annual Outing, Manufacturers' Country Club, Oreland, Pa., Sept. 24, 1930.

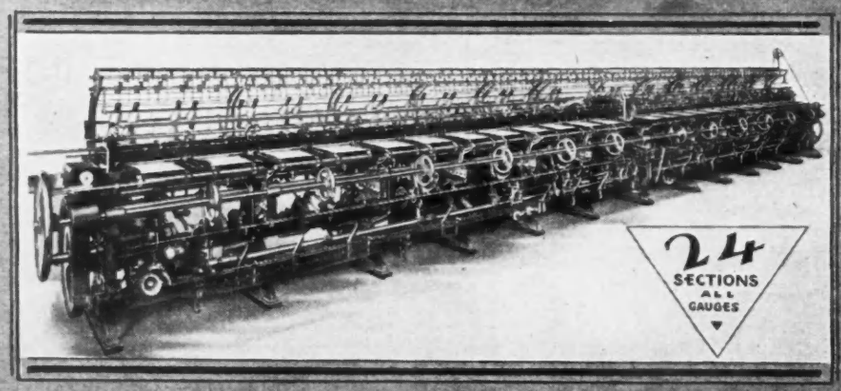
National Safety Congress, Textile Section, Annual Meeting, William Penn Hotel, Pittsburgh, Pa., Sept. 30-Oct. 1, 1930.

National Association of Cotton Manufacturers, Annual Meeting, Poland Springe, Me., early in October (exact date not available).

Ninth Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 20-25, 1930.

Textile Division, A.S.M.E., National Meeting, Poinsett Hotel, Greenville, S. C., Oct. 22, 1930.

Southern Textile Association, Semi-Annual Meeting, Poinsett Hotel, Greenville, S. C., Oct. 23, 1930.



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FULL FASHIONED HOSIERY MACHINES

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COURSES PER MINUTE

IN EVERY TEXTILE COUNTRY

ON every continent and in every country where textiles are produced, you will find Schubert & Salzer Full Fashioned Hosiery Machines represented.

This world-wide acceptance of these machines is the logical outgrowth of a basic design which has been brought to its final stage of perfection only after over half a century of manufacturing. Speed --quality of fabric--long service.

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ALFRED HOFMANN
INCORPORATED

West New York, New Jersey

Meeting to Consider Camelhair Fabric Labeling

Discussion as to the method of labeling fabrics containing camelhair or allied fibers in order to meet the Federal Trade Commission requirements have been held in three informal meetings of manufacturers and distributors of these products.

A meeting which is expected to result in a decision satisfactory to the majority of those interested, will be held at the offices of the Wool Institute at 10:30 a.m., July 22. This may be the final meeting. The recommendations made will be forwarded to the Federal Trade Commission as an expression of opinion of the makers and distributors of these fabrics.

In preparation for the meeting the institute has procured rulings already made by the Federal Trade Commission in cases that might be considered similar to the one to be discussed.

Industrial Rayon Holds Mid-Year Sales Conference

The mid-year sales conference of the Industrial Rayon Corp. was held July 9 at the home office in Cleveland, Ohio. The meeting opened with a luncheon which was followed by the business session.

A. A. Murphy, sales manager, had charge of the meeting, and outlined the sales policies of the company for the ensuing months. H. S. Rivitz, president, in one of the most interesting talks of the meeting, analyzed the present conditions of business and their effect on the rayon industry. Hayden Kline, technical director and George Brooks, service manager, spoke briefly on manufacturing and service as related to selling.

Woolrich (Pa.) Woolen Mills Celebrate 100th Birthday

Celebration of 100 years as woolen manufacturers will be held July 25 to 27 by Woolrich (Pa.) Woolen Mills of John Rich & Bros. The founding of the mills marks also the founding of the town and the event is shared by all the inhabitants. Former governor of Pennsylvania Gifford Pinchot is scheduled to speak on Friday. The historical address opening the fete will be given by M. B. Rich.

Army Buys Textiles

PHILADELPHIA.—Bids to supply Depot Quartermaster, U. S. Army, with 1,038 yd. sky-blue melton cloth, were opened July 11, the following bids being received: Warrenton Woolen Co., $2.74; Germania Mills, $2.67; Columbia Woolen Mills, $2.38; and American Woolen Co., $2.36. Contract for this item was placed with American Woolen Co., at bid figure. July 14, bids were received to supply depot with 39,141 yd. Albert twill, bids being: Geo. Woods & Sons Co., 27.18c. on specification material and 25.24c. on sample; Batavia Mills, 23.89c.; and S. B. Marks Co., 26.88c. Depot will open bids Aug. 6 for 500,000 pairs of white cotton gloves for enlisted men, conforming with specifications 6-136.

Leading Mills to Tag Weighted Silks "Weighted"

The word "weighted" will be stamped on invoices covering weighted merchandise and on each piece or wrapper of such merchandise sold or offered for sale by a representative group of silk manufacturers, according to letters being received from these firms by the Silk Association of America, Inc. This will include all merchandise sold as silk, satin, taffeta or other trade name.

This action is being taken, it is stated by Thomas B. Hill, president of the association, as an endeavor by the trade to avoid any misunderstanding as to the nature of the merchandise distributed by it. The interest of the silk trade in avoiding misleading descriptions is exemplified in the fact that the first case decided upon by the Federal Trade Commission to enjoin misbranding was one in which the association filed a petition in 1915 through its attorneys.

Letters have been received so far from the following firms: Belding, Heminway Co., Bloomsburg Silk Mill, Cheney Bros., B. Edmund David, Inc., Duplan Silk Corp., C. K. Eagle & Co., Inc., Empire Silk Co., Finsilver, Still & Moss, Goldstain Wilkins Corp., Hess, Goldsmith & Co., Inc., Jersey Silk Mills, Inc., Jas. G. Johnson & Co., Lang & Lewin, Inc., Menke Kaufman & Co., Inc., Post & Sheldon Corp., Sauquoit Silk Mfg. Co., Schwarzenbach Huber Co., D. I. & C. H. Stern, Inc., Stehli Silks Corp., Stunzi Sons Silk Co. Inc., Susquehanna Silk Mills, Tirrell Bros. Silk Corp., Wahnetah Silk Co., William E. Wiener, Inc., Gilt Edge Silk Mills of New Jersey and Kattermann & Mitchell Co.

TEXTILE WORLD Cotton and Wool Indexes

COTTON INDEX NUMBERS

Date	Cotton	Yarns	Gray Goods	Colored Goods	Aver. for Cloths	Group Average
July 31, 1914	100	100	100	100	100	100
1925						
January...	192	197	195	173	184	187
April.....	196	194	193	180	187	188
June.....	192	179	181	177	179	179
July.....	197	183	185	176	181	182
October...	174	189	193	178	186	186
1926						
January...	167	175	177	162	170	171
April.....	153	163	161	155	158	159
June.....	149	152	153	152	153	152
July.....	149	149	151	141	146	147
October...	106	141	147	144	146	143
1927						
January...	107	134	140	140	140	138
April.....	118	136	143	142	143	140
June.....	135	147	152	144	148	147
July.....	143	149	156	145	151	150
October...	168	176	184	169	176	176
1928						
January...	151	163	166	166	166	165
April.....	164	160	160	165	162½	162
June.....	172	163	161	168	165	164
July.....	174	167	165	168	166½	167
October.....	157	161	162	164	163	162
1929						
January...	162	166	158	169	163½	164
April.....	163½	164	157	173	165	165
June.....	150	160	148	167	157	158
July.....	149	160	149	166	158	158
October...	147	160½	155	161	158	158
1930						
January.....	138	149	141	157	149	149
February..	125	144	134	157	145	145
March....	120	138	130	157	144	142
April.....	131	139	129	156	143	142
May.....	131	136	129	156	142	141
June.....	116	127	120	150	135	133

LAST month we stated that June indexes would probably disclose a positive check to the downward trend in wool and its manufactures. This has actually taken place. Wool and cloth are unchanged for the month, yarns up 1 point and tops off 1 point. This stabilization which has been developing during the past three months is not unlikely to continue, followed by a gradual rise in the months to come.

The downward trend in the cotton industry continued throughout June, the group index figure losing 8 points for the month to 133 which figure is 16 points below the high of the year in January, and is at the low point for June for five years. The slump in cotton brought about sympathetic declines in yarns and goods. The cotton index for June was 15 points lower than for May and 22 points below January, the high of the year. At time of writing the markets are quite unstable owing to a general expectation that cotton may reach an even lower basis before stabilization occurs.

Inquiries regarding interpretation and use of TEXTILE WORLD index numbers may be addressed to TEXTILE WORLD, Statistical Dept., Statler Bldg., Boston.

WOOL INDEX NUMBERS

Date	Wool	Tops	Yarns	Cloth	Group Aver.
July 31, 1914	100	100	100	100	100
1925					
January.....	215	213	211	229	221
April.....	219	234	230	241	235
June.....	204	211	210	241	225
July.....	216	217	216	239	227
October.....	216	212	212	227	220
1926					
January.....	215	213	211	229	221
April.....	181	193	198	224	208
June.....	173	183	188	220	202
July.....	173	184	189	215	199
October.....	178	186	193	209	198
1927					
January.....	178	187	190	209	198
April.....	177	182	184	211	196
June.....	177	180	182	211	195
July.....	180	183	183	211	196
October.....	185	185	189	211	199
1928					
January.....	194	193	186	212	201
April.....	199	206	198	215	208
June.....	204	209	203	215	210
July.....	204	206	203	214	209
October.....	197	197	203	212	206
1929					
January.....	199	198	201	211½	206
April.....	187	189	198	211	202
June.....	173	174	191	211	196
July.....	169	170	188	211	194
October.....	164½	169	188	211	194
1930					
January.....	148	161	177	211	188
February....	138	150	173	209	183
March.....	132	144	169	202	177
April.....	127	139	164	202	175
May.....	124	136	159	202	173
June.....	124	135	160	202	173

Harvard Bureau Reports on 1929 Department Store Performance

Typical department stores in 1929 operated on a gross margin ranging from 28.7% of net sales to 34.4%, according to the size of the store, and women's specialty apparel stores on a gross margin from 32.2% to 35.8% of net sales. Total expense commonly ranged from 29.8% to 32.8% of net sales for department stores and from 32.2% to 33.8% for specialty stores. Net profit, over and above interest on investment, ranged from a loss of 1.1% of sales to a profit of 1.6% for department stores of various sizes and from zero to 2.1% for specialty stores.

These facts are disclosed in the report just published by the Harvard Bureau of Business Research on "Operating Results of Department and Specialty Stores in 1929." The new bulletin, No. 83 in the bureau's series, reports the results of the tenth annual study of operations in the department store field, undertaken with the cooperation and financial assistance of the National Retail Dry Goods Association. The present study is based on 612 detailed profit and loss statements and balance sheets representing the operations of 768 stores. The aggregate net sales of these stores for the year 1929 were in excess of $1,500,000,000, a figure equivalent to approximately 25% of the estimated department store sales volume of the United States.

The report carries somewhat farther the tentative analysis made last year of the operations of so-called department store chains. From this analysis it appears that the independent stores are still operating with slightly lower expense than the centrally-owned stores of corresponding size.

Full-Fashioned Wage Agreement Near

PHILADELPHIA.—It is probable that the committee of the American Federation of Full Fashioned Hosiery Workers, which has been securing the opinions of the various locals in different sections of the country in regard to the new and lower wage scale proposed to them by manufacturers who are parties to the national agreement, will make a report late this week.

A meeting was scheduled for Saturday, July 19 at the labor headquarters at Second & Cambria Sts. This meeting is of vital importance to both manufacturers and full-fashioned hosiery knitters, determining whether union labor shall or shall not accept the new national agreement which the recent convention of the hosiery workers decided to submit to their entire membership.

As this is written indications are strongly in favor of the acceptance of the terms, which to date have not been released for publication although it has been rumored that the reductions will average in the neighborhood of 15%, and this will mean that the 40 manufacturers throughout the country who are members of the group having an agreement with union, will have the wage question determined for the next year, assuming that all manufacturers renew the agreement which terminates Sept. 1.

If hosiery workers agree to accept the new terms of wages at their meeting July 19 or within the following days, then a new agreement or contract between these manufacturers and the union will be drawn and signed. Union officials estimate that approximately 40% of full-fashioned hosiery made in the United States will be manufactured in accordance with this wage agreement.

Another Amos Parrish Fashion Clinic

More than 100 stores have made advance reservations for the Amos Parish Fashion Merchandising Clinic, to be held in New York at the Ritz-Carlton Hotel, July 21 to 24.

The July clinic will present advance forecasts of fashions in apparel and accessories for the fall and winter seasons, with merchandise and sales promotion plans and recommendations. Methods of advertising and displaying the fall and winter fashions will also be covered in the July clinic.

The program will include an explanation of the correct lengths of dresses and coats for fall and winter, forecasts of the fast selling materials in coats and dresses, the most important colors in coats, dresses, hats, shoes, handbags and other accessories. Summaries of the volume fashions in all ready-to-wear departments, forecasts of fur coats and fur trimming for fall and winter, and analysis of the volume fashions in handbags, gloves, jewelry and other accessories are also included in the July clinic program.

Letters to the Editor

(Continued from page 26)

small group of men banded together for that purpose. These men stood a chance to lose and no chance to gain. At the start of the venture it was planned to distribute profits, if any, pro rata among the customers but it was later decided that such profits should be devoted to educational purposes. It is our understanding that the three schools mentioned are closely associated with the men who put up the original cash to put the enterprise into activity.

You will note that 75% of the Textile Alliance surplus fund, which is being handled through the Textile Foundation, is being used for the benefit of the industry at large, and it is only 25% which the underwriters of the enterprise assigned to more specific purposes, associated with the industry, but naturally directed to institutions in which the underwriters had personal interests. The 25-75 ratio was set sometime prior to 1922. In view of these circumstances we cannot belive that any injustice has been done. *Editor*, TEXTILE WORLD.

Slants on Tariff Relation to Mixture Fabrics

Not the least of the burdens imposed by the new tariff is determining the fiber content of mixed fabrics of wool-and-cotton, wool-and-silk, and wool-and-rayon. Paragraph 1122 provides that fabrics containing 17% or more of wool by weight, but not in chief value of wool, shall pay a duty computed according to the proportion that the weight of the wool and other materials bears to the duties that otherwise would apply under other paragraphs.

The rates of duty on all possible combinations of weight have been computed by the tariff commission. On cotton-and-wool cloths valued at not more than $1.25 per lb. there are 24 combinations under paragraphs 906 and 1109, ranging from 8.50c. per lb. and 58.30% ad valorem when the weight percentages are 83% cotton and 17% wool to 20c. per lb. and 56% ad valorem when the weights are 60% cotton and 40% wool. Similar scales have been computed for silk-wool and rayon-wool goods.

It remains for the customs appraisers to determine the proportion by weight of the fiber content of these mixed goods as they are imported. It will be necessary to analyze practically every fabric containing wool. This would be a laborious task, but imports of silk or rayon and wool mixtures are small and the duties on cotton-and-wool fabrics resulting from this intricate method of calculation are so high as practically to eliminate imports.

Imports have been principally of boys' suitings usually weighing 14 oz. and composed of 65% cotton and 35% shoddy mixed in both warp and filling. Tariff was 40% and average ad valorem under the new combination duties is approximately 85%, a figure that is expected to discourage this increasing foreign competition. Cotton fabrics containing less than 17% wool are dutiable at 60% under paragraph 906. Imports under both paragraph 1122 and paragraph 906 are subject to an additional duty of 10c. per pound on content of staple cotton, if any.

Textile Workers to Hold Conference

PHILADELPHIA. — Curtailment program of The Cotton-Textile Institute will be discussed by Dr. George S. Mitchell, professor of economics at Columbia University, in an address to be delivered at a conference on southern organization drive of the American Federation of Labor to be held at Bryn Mawr College, July 20.

Dr. Mitchell is a student of textile conditions in this country as well as in Great Britain and the Orient. He will review conditions of recent years, concluding with an analysis of present program which cotton manufacturers have adopted. Other speakers will be Professor Louis F. Bader, New York University, Thos. T. McMahon, president, United Textile Workers.

Three New Mills Join Cotton-Textile Institute

The Cotton-Textile Institute, Inc., announced this week the addition of three mills to its membership — the Fieldale Plant of the Carolina Cotton & Woolen Mills, Fieldale, Va., the Dale Cotton Mills, Ozark, Ala., and the Enterprise Cotton Mills, Enterprise, Ala. The Spray and Leaksville plants of the Carolina Cotton & Woolen Mills Co. have been members of the Institute for several years.

Industrial Fair at Atlantic City

ATLANTIC CITY, N. J.—The Federal Government, States, more than 100 industries, insular possessions and even Soviet Russia are represented in the American Fair, which opened in the Atlantic City Auditorium on Thursday evening, July 17, and continues until August 27. The fair will be an annual institution. Among the textile exhibits will be a booth taken by the Durene Association for display of fabrics made of mercerized cotton yarns.

Schlake Dye Works Expands

The Schlake Dye Works, of Chicago, Ill., has purchased the equipment of the American Textile Dye Works, Milwaukee, Wis., and will process cotton and woolen piece goods in the near future.

The skein and package dyeing department will function as before, the new line of work being an added feature of their facilities, enabling them to care for all the needs of the Chicago market.

Employes of Six Philadelphia Companies Hold Joint Outing

The annual field day and outing of the Philadelphia Industrial Athletic Association will be held at Woodside Park, Philadelphia, on Aug. 2. The organization covers the employes of six companies totaling 14,000 persons. The companies are L. H. Gilmer Co., Proctor & Schwartz Co., Leeds & Northrup Co., Brown Instrument Co., Mitchell Specialty Co. and Heintz Mfg. Co. The event will be an all-day affair involving an athletic schedule of 40 events.

Pilot Hosiery to Be Sold Through E. M. Townsend & Co.

The Pilot Hosiery Mills, Inc., of Asheboro, N. C., has appointed E. M. Townsend & Co., New York, as their exclusive representative for their entire line of men's fancy half hose effective July 1.

The Pilot line has formerly been sold through the offices of several mill agents. Executives of the Pilot Hosiery Mills, Inc., state that they have arrived at this decision after an intensive study of markets, marketing conditions, etc., and they believe that this change will be in the interest of better merchandising of their lines. The new Pilot line for fall will consist of new constructions.

Useful Catalogs

Humidification. American Moistening Co., Providence, R. I. Study of humidification problems and their solution, as found by James W. Cox, Jr., in trip through 43 textile mills from Maine to Mississippi.

Steam Traps. Armstrong Machine Works, Three Rivers, Mich. Detailed explanatory catalog of steam traps and how to increase their efficiency.

Looms. The Stafford Co., Reidville, Mass. Describes Stafford equipment, including automatic rayon loom, feeler, sliding-bar warp stop, and harness motion and dobby. Colored illustrations.

General Electric Bulletins. General Electric Co., Schenectady, N. Y. Bulletins on rheostats, strip heaters, welding head and control, solid-shaft vertical induction motors, Textolite gears, capacitor motors, Fabroil gears; also special catalogs discussing "Arc Welding in Industry" and "Electric Equipment for Cotton Gins."

Business News

Superheater Co. Moves Offices

On July 1 the Superheater Co. moved from room 801 to room 1325, in the Peoples Gas Building, 122 South Michigan Blvd., Chicago, Ill.

Carlton Resigns from Consolidated Ashcroft

H. D. Carlton resigned as president of Consolidated Ashcroft Hancock Co., Inc., Bridgeport, Conn., and as vice-president of Manning, Maxwell & Moore, Inc., on July 3, 1930.

J. B. Ford Sales Co. Southern Representative

F. M. Oliver is representing the J. B. Ford Sales Co. in the southern territory. Mr. Oliver is a native of Georgia and lately took up residence in Charlotte, N. C., so as to be centrally located in the textile area.

Hazard Advertising Adds Woman's Department

Marjorie Signer and her complete staff of advertising women became the woman's department of the Hazard Advertising Corp. on July 15. Marjorie Signer's all-woman agency has had a successful record in the home and style field, and this addition will offer a broader service to Hazard clients.

J. T. Broderick Retires From General Electric

Concluding 41 years of continuous service with the General Electric Co., John T. Broderick, secretary of the company's manufacturing committee retired from active service July 1, 1930.

Mr. Broderick joined the Thomson-Houston Co., Lynn, Mass., in 1889, as one of the factory staff of E. W. Rice, Jr. After several years as personal assistant to Mr. Rice, during which interval the General Electric Company was formed in 1892, Mr. Broderick was elected secretary of the manufacturing committee shortly after its organization in 1893, holding that position ever since.

P. Golsan Returns to Ford, Bacon & Davis

Page Goslan, recently vice-president of the Great Western Portland Cement Co., Kansas City, has just been appointed manager of the new business department of the engineering organization of Ford, Bacon & Davis, 39 Broadway, New York. Mr. Goslan was associated with this firm for many years before taking up his duties with the Great Western Portland Cement Co., and now returns to take charge of new business activities, covering the field of natural gas pipe line construction, industrial appraisals and management and many other lines of work.

Obituary

James Scott McMaster

James Scott McMaster, formerly superintendent of the Berkshire Mills, Philadelphia, a concern that was dissolved four years ago, died July 15, at the age of 76 years. He was connected with the Berkshire firm for many years and was one of the most widely known textile manufacturers in Philadelphia. He was prominent in social and civic affairs in Frankford section of the city, and was one of the founders of the Frankford Checker Club and the Frankford Country Club; for 25 years he was a trustee of the Frankford Hospital and for 10 a director of the Frankford Building and Loan Association.

Alfred L. Marshall

Alfred L. Marshall, retired woolen mill overseer, died in Pittsfield, Mass., July 10, aged 85. He was a Civil War veteran. Born in Germany of English parentage, he came to this country in 1848, and in early life entered the employ of the J. B. Barker Co., woolen manufacturer of Pittsfield. He served for 45 years with the Pontoosuc Woolen Mfg. Co., retiring in 1912.

Andrew J. Mungall

Andrew J. Mungall, for 18 years overseer of dyeing and chemist for the Thorndike Co., West Warren, Mass., died suddenly at his home in that town on July 9, from a paralytic shock sustained two days previously. He was 53 years old, a native of Scotland and went to West Warren in 1912. He was a former selectman of the town. He leaves a widow and a sister.

Edward A. Hamlin

Edward A. Hamlin, 87 years old, one of the founders of the Oriskany Falls (N. Y.) Knitting Co. which was absorbed some time ago by the Utica Knitting Co., died last week after a brief illness. He was prominent in fraternal circles and a director in a number of commercial institutions.

Fred Passmore

Fred Passmore, overseer of weaving for the Davis & Brown Woolen Co., East Killingly, Conn., died suddenly of heart disease at his home there on July 7, aged 61 years. He was born in East Killingly on June 29, 1869, and spent his entire life in that village.